Marine Corps Studies Program Support

Cost Benefit Analysis (CBA) of Collocating and Combining the Communications School with the Marine Corps Communication-Electronics School at 29 Palms, CA

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14. ABSTRACT
The Communications School, located at the Marine Corps Base (MCB) Quantico provides instruction through the various career and/or proficiency levels for officers and warrant officers. The Marine Corps Communication-Electronics School (MCCES), located at the Marine Corps Air Ground Combat Center aboard 29 Palms, CA provides training for a majority of the Marine Corps Communication-Electronics Military Occupational Specialties (MOSs). This study assessed the benefits and costs of moving the Communications School to 29 Palms and combining it with MCCES. Communications School instruction facilities and infrastructure requirements were determined along with the current capability of 29 Palms to meet those requirements. The Study Team determined the number of billets that might no longer be required if the schools were combined, as well as the one-time costs of relocation. The recurring costs of Communications School operations at both Quantico and 29 Palms were estimated and compared. The results indicate that it appears to be beneficial to the Marine Corps to continue pursuing the relocation of the Communications School to 29 Palms and prepare for its integration with MCCES.

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MARINE CORPS STUDIES PROGRAM SUPPORT
FINAL REPORT

Cost Benefit Analysis (CBA) of Collocating and Combining the Communications School (MCB Quantico) with the Marine Corps Communication-Electronics School (MCCES) at 29 Palms, CA

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Abstract

The Communications School, located at the Marine Corps Base (MCB) Quantico provides instruction through the various career and/or proficiency levels for officers and warrant officers. The Marine Corps Communication-Electronics School (MCCES), located at the Marine Corps Air Ground Combat Center aboard 29 Palms, CA provides training for a majority of the Marine Corps Communication-Electronics Military Occupational Specialties (MOSs). This study assessed the benefits and costs of moving the Communications School to 29 Palms and combining it with MCCES.

Communications School instruction facilities and infrastructure requirements were determined along with the current capability of 29 Palms to meet those requirements. The Study Team determined the number of billets that might no longer be required if the schools were combined, as well as the one-time costs of relocation. The recurring costs of Communications School operations at both Quantico and 29 Palms were estimated and compared.

The Study Team found significant tangible and intangible benefits associated with relocating the Communications School to 29 Palms and integrating it with MCCES. The results indicate that it appears to be beneficial to the Marine Corps to continue pursuing the relocation of the Communications School to 29 Palms and prepare for its integration with MCCES.

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Executive Summary

ES.1 Background

The Communications School, located at the Marine Corps Base (MCB) Quantico provides instruction through the various career and/or proficiency levels for officers and warrant officers. The Marine Corps Communication-Electronics School (MCCES), located at the Marine Corps Air Ground Combat Center aboard 29 Palms, CA provides training for a majority of the Marine Corps Communication-Electronics Military Occupational Specialties (MOSs).

This study assessed the benefits and costs of moving the Communications School to 29 Palms and combining it with MCCES.

ES.2 Study Overview

The Study was composed of the five tasks shown in Figure ES-1.

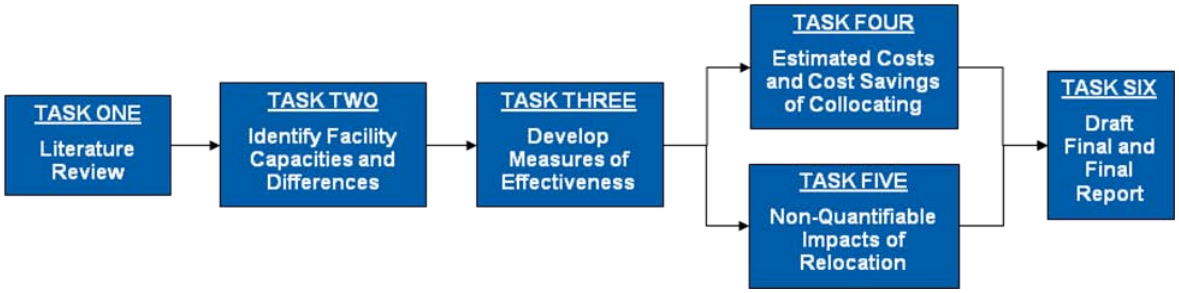

Figure ES-1. Task Overview

The Study Team familiarized itself with the Communications School organization and operations, applicable orders and instructions, general training requirements of producing communications officers, and other literature bearing on the subject of the Study. Through a review of Programs of Instruction (POIs) and data provided by the Communications School, the Study Team determined the infrastructure requirements for conducting training and compared those requirements with the excess capacity at 29 Palms. The literature review and facilities requirements tasks supported development of Measures of Effectiveness (MOE). The Study Team determined the number of billets that might no longer be required if the schools were combined, as well as the one-time costs of relocation. The recurring costs of Communications School operations at both Quantico and 29 Palms were estimated and compared. The non-quantifiable impacts were identified and assessed. The results are documented in this Report

ES.3 Facility Capacities and Differences

The Study Team researched the training facilities and infrastructure presently supporting instruction at the Communications School. This analysis determined the facilities and infrastructure requirements, reviewed the training capacity of the Communications School, and the feasibility of supporting increased instruction in MCCES facilities at 29 Palms. The analysis included the capacity of the base infrastructure, from classroom space, administrative and storage to the supporting establishment of base housing and transportation support. The results are summarized in Table ES-1.

Table ES-1. Requirements and Capacity Analysis Summary

Category	Requirement	MCCES/29 Palms Excess Capacity
Classroom and Support	11,969 Net Square Feet (NSF)	None
Training Areas	7 Field Exercises (FEXs)	Available 50% over the course of a year.
Administrative	3,200 NSF	13,213 NSF
Enlisted Instructor Platoon (EIP) Training Support	5,404 NSF	None
EIP Ground Communications Maintenance	11 personnel and test equipment	MCCES can support within existing facilities.
EIP Motor Transport/Engineer Intermediate Level Maintenance	91 vehicles, trailers, and generators	Combat Logistics Battalion 7 can support within existing facilities.
Supply	5,970 items of individual equipment	MCCES can support within existing facilities.
Billeting – Student	140 personnel	2009 Housing Market Analysis shows a community shortfall of 971 units for accompanied personnel and 120 units for unaccompanied personnel.
Billeting - E1-E5 Permanent Party	33 personnel	MCCES can support within existing facilities.
Billeting - Officer and Staff Non-Commissioned Officer Permanent Party Bachelor Housing	4 personnel	None available on base. 2009 Housing Market Analysis shows a community shortfall of 120 units.
Billeting - Family Housing	61 personnel	2009 Housing Market Analysis shows a community shortfall of 971 units.
Messing	30 personnel	MCB 29 Palms can support within existing facilities.

The data indicate that MCCES does not have any available excess capacity for classrooms, instructor workspace, or EIP work areas.

ES.4 Measures of Effectiveness

Three MOEs were developed to assess the benefits of relocating the Communications School to 29 Palms:

1) Change in Table of Organization (T/O) – Combining the schools may require some change in force structure, i.e., an increase or decrease in T/O billets, by rank and MOS, to fulfill necessary duties and satisfy training or support requirements. Where there is a change in force structure, this MOE, in number of billets, quantified the difference between relocating to 29 Palms and the status quo.
2) Cost of Relocating - Cost (in dollars) identified the one-time costs of relocating and any Military Construction (MILCON) costs for addressing facility shortfalls.
3) Change in Cost of Operating - This MOE captured the cost of operating the Communications School at MCB 29 Palms compared with MCB Quantico. The cost elements included recurring annual costs such as Permanent Change of

Station (PCS) moves, Temporary Additional Duty (TAD), printing services, and the direct costs of services and operations at the new location. Current operating costs were compared with projected future operating costs in order to determine, by cost category, increases or decreases in costs.

ES.5 Change in Table of Organization

The Study Team reviewed the two organizations and identified the best location in the MCCES organization for each element of the Communications School organization. The Study Team considered each of the Communications School billets and, through discussions with MCCES personnel and analysis of existing MCCES class schedules, determined where each billet would most appropriately fit into MCCES.

Using data provided by the Communications School, the Study Team found that members of the EIP were fully engaged in supporting officer training during Field Exercises and had very little contact with students otherwise. By adjusting MCCES class schedules, many of the EIP billets could be replaced with instructors already in the MCCES organization. These results are based on data available to the Study Team; if the decision were made to move the Communications School to 29 Palms and combine it with MCCES, a Formal Curriculum Analysis would have to be conducted to determine exactly which EIP billets should be retained.

The Study Team determined that the Communications School T/O could potentially be reduced by 40 active duty billets. An additional three billets were identified in the MCCES T/O that might no longer be required in a combined organization. Also, the number of civilian billets can potentially be reduced from eight to five.

ES.6 Cost of Relocating

Cost categories considered in estimating the costs of relocating the Communications School to 29 Palms included Planning and Coordination, Infrastructure, PCS Costs, and Relocation. Table ES-2 summarizes the costs of relocating to 29 Palms.

Table ES-2. Relocation Cost Summary (FY11$)

Category	Total
Planning and Coordination	$10,676
Infrastructure - MILCON, Furnishings, Fixtures, and Equipment, and Information Technology	$10,368,897
PCS - Military and Civilian Permanent Party	$611,859
Relocation - Equipment Move and Navy/Marine Corps Intranet Asset Relocation	$219,247
Total Cost of Relocation	**$11,210,680**

ES.7 Change in Cost of Operating

This MOE captures the cost of operating the Communications School at 29 Palms compared with Quantico. Table ES-3 summarizes the Operating and Support (O&S) costs at each location and shows the difference in each category.

Numbers in parentheses in the Difference column represent decreases in costs by moving to 29 Palms. The difference in the total annual cost to the Marine Corps between the two locations is an increase of $225,154 (FY11$). Included in the

operating costs at 29 Palms are Basic Allowance for Housing (BAH) associated with the billets no longer required in a combined organization ($363,329) and the cost of continued maintenance of the Communications School facilities at Quantico ($167,752). While these costs are still borne by the Marine Corps, the Quantico facilities (37,769 square feet) and the 43 surplus billets can no longer be attributed to providing communications training and become available to address other Marine Corps needs. Thus, the operating costs attributable to communications training decrease by $305,927.

Table ES-3. Operating Costs Summary (FY11$)

Element	Quantico	29 Palms	Difference
Active Duty Permanent Party BAH	$1,333,916	$686,709	($647,206)
BAH Cost Shift	$0	$363,329	$363,329
Civilian Staff Pay and Benefits	$690,849	$440,518	($250,331)
TAD	$55,986	$55,137	($849)
Vehicle	$4,656	$0	($4,656)
Printing and Duplication	$58,520	$18,536	($39,983)
Building Maintenance Quantico	$167,752	$167,752	$0
Building Maintenance 29 Palms	$0	$107,718	$107,718
Basic Communications Officer Course (BCOC) Student PCS	$903,586	$1,862,063	$958,477
BCOC Student BAH	$1,486,955	$952,848	($534,108)
Advanced Communications Officer Course and Warrant Officer Communications Course Student Travel and Per Diem	$563,322	$836,085	$272,763
Other	$404,821	$404,821	$0
O&S Total	**$5,670,362**	**$5,895,516**	**$225,154**
O&S Attributable to Communications Training	**$5,670,362**	**$5,364,436**	**($305,927)**

Costs in shaded cells are no longer attributable to communications training.

ES.8 Non-Quantifiable Impacts of Collocation

The Study Team identified non-quantifiable impacts of relocating the Communications School to 29 Palms and integrating it with MCCES. The impacts related to increasing training value are discussed below.

ES.8.1 Aligning Curriculum Content

Collocation would provide an opportunity for closer coordination of course content by individuals with a daily working relationship. It would foster daily coordination and interaction that promotes cooperation among the instructor groups and increase the opportunity to align course content to take advantage of synergies of content and instruction. Collocation will enable the MCCES staff (including the Communications School staff integrated into the MCCES staff) to examine in detail the content of related courses, adjust content, and adjust course schedules to maximize the effective use of instructors and equipment to improve the quality and effectiveness of communications training.

ES.8.2 Sharing Experiences within the Instructor Cadre

Discussions with staff at both locations indicate that interaction and the exchange of ideas and experiences is valuable to individual Marines, to the training function, and to the Marine Corps communications community as a whole. The desired result should be consistent and well informed instruction based on the exchange and synthesis of different experiences across the communications instructor community. Shared operational and technical experiences will enable a better training result (sending better trained communicators to operational units, with a consistent understanding of appropriate tactics, techniques, and procedures (TTPs)), broaden individual and collective exposure to current communications techniques, and provide a path to capturing and passing on "best practices" derived from practical experience. Collocation will promote such interaction and exchange.

ES.8.3 Developing Capstone Exercises

The Army perceives value in combined training exercises and conducts a capstone event, Mercury Fusion, for each of its courses, stressing communications in a tactical environment. This exercise brings together different signal MOSs to perform their respective roles in a Tactical Operations Center. The Mercury Fusion exercise's primary purpose is to stress the need to combine and coordinate different technical skills to produce a functional communications system.

Based on discussions with staff at both locations and an overview of practices at the US Army Signal Center of Excellence, the Study Team expects that, with proper coordination, collocation will set conditions that will allow gradual coordination of courses, resulting in multi-course exercises that will strengthen interaction among the courses.

ES.8.4 Reinforcing the Relationship between Officers and SNCOs

The EIP currently is staffed with NCOs and junior enlisted who support officer training by setting up equipment, conducting basic operator training and orientation for officer students, and creating operational communications systems to support officer training. On the other hand, communications officers in the Operating Forces routinely interact with, and rely upon, SNCOs with specific technical expertise. SNCO training is conducted at MCCES, and SNCOs do not interact with officers in a training environment as they would in an operational communications unit. The current situation does not expose junior officers to the beginning of the close working relationship that must exist between officers and SNCOs.

In a combined organization, most of the junior EIP billets would not migrate to B Company in MCCES and their functions would be replaced by existing MCCES staff, which has a greater percentage of SNCOs that could be made available to support FEXs by adjusting the MCCES course schedule. This would enable more opportunities for officer students to interact with and understand the value of the technical skills resident in the communications SNCO community. Increased contact between officer students and SNCO instructors will better approximate the relationship that officers will find in operational units.

ES.9 Observations and Recommendation

ES.9.1 Costs

While the Communication School is fulfilling its mission at Quantico, at least two MILCON requests to replace existing Communications School facilities at Quantico have been submitted. The two to which the Study Team had access both indicated that the existing facilities were inadequate and had not had significant renovations since 1989. One indicated a project cost of $17.81M.[1]

MCCES cannot accommodate the Communications School's classroom and instructor work space requirements. MCCES has adequate excess capacity to provide administrative work space. Due to the existing excess capacity and the reduced T/O of the combined organization, providing additional facilities to conduct officer training will require an estimated investment of approximately $10.4M in MILCON at 29 Palms.

Requests for MILCON funding to replace Communications School facilities at Quantico has competed successfully, but the requirement for new facilities, nevertheless, exists. If the Marine Corps decides to expend the resources, the question is, "Where should the new building(s) be located?"

Should the Communications School relocate, the annual cost associated with providing officer training will be reduced by $306K.

ES.9.2 Benefits

A tangible benefit of combining the schools is that it will result in making 43 billets available for application to other Marine Corps needs.

There will also be substantial, albeit intangible, benefits if the schools are consolidated:

- Facilitating common training – As discussed above, benefits in this area include better alignment of curriculum content, instruction based on the combined experiences of collocated instructors, the potential for creating a capstone exercise that reflects what a team of communicators (officer and enlisted) will encounter in an operational environment, and reinforcing the relationship between officers and SNCOs.
- Producing equipment savings – A single organization is likely to require less equipment than the combined equipment of two separate organizations. Collocation would allow for potentially reduced training equipment requirements through more efficient use of equipment across classes.
- Enhancing support to the Marine Corps communications community – Collocation would provide a single focal point for communications expertise, rather than the two that exist currently.

Consolidation of the two schools is necessary if any of these benefits are to be realized.

[1] Project Data Sheet, Project Number P509, 13 September 2007.

ES.9.3 Recommendation

Based on the minimal costs and the tangible and intangible benefits that will accrue, it appears to be beneficial to the Marine Corps to continue pursuing the relocation of the Communications School to 29 Palms and prepare for its integration with MCCES.

1. INTRODUCTION

1.1. Background

The Communications School, located at the Marine Corps Base (MCB) Quantico provides instruction through the various career and/or proficiency levels for officers and warrant officers. The Communications School also provides support to other units aboard MCB Quantico. The Marine Corps Communication-Electronics School (MCCES), located at the Marine Corps Air Ground Combat Center aboard 29 Palms, CA provides training for a majority of the Marine Corps Communication-Electronics Military Occupational Specialties (MOSs).

This study assessed the benefits and costs of moving the Communications School to 29 Palms and combining it with MCCES.

1.2. Objective and Scope

1.2.1. Objective

The primary objective of this study was to examine the potential benefits and costs associated with moving the Communications School to MCCES at 29 Palms, CA. Additionally, the study identified any associated tangible or intangible issues, consequences, or considerations to be addressed if the Communications School were to be moved. The objective also included identifying any potential improvement in Marine Corps communications training.

1.2.2. Scope

The scope of this study was limited to moving the Communications School and encompassed all training conducted at the Communications School.

1.3. Assumptions and Major Factors for Consideration

1.3.1. Study Assumptions

Per the Statement of Work (SOW) (§ 3.a), the Study Team assumed the following:

- The Marine Corps mission as prescribed in the National Security Act of 1947 (amended) will not change.
- The size of the Marine Corps will be 202,000 active component Marines.
- Base and community facilities and infrastructure (e.g., commissaries, schools, housing, barracks, medical services, etc.) may have to be expanded to meet the demands of a larger base population, if relocation is recommended.

In addition to the Assumptions identified in the SOW, the Study Team assumed the following:

- Marine Corps Study Sponsor representatives shall assist the Study Team in obtaining the required data and documentation for this study in a timely manner either by assisting in obtaining direct access to such sources or by obtaining such data and documentation on behalf of the Study Team. Study Sponsor representatives shall assist in gathering Marine Corps cost and course data and

information, including the most recent Cost Estimation and Resource Allocation Model (CERAM) for the Communications School.

- Additional data requirements will emerge as the study progresses. The Study Team requires the Government to respond to requests for data, to provide assistance in obtaining data, to provide assistance in facilitating contact with Subject Matter Experts (SMEs) and Points of Contact (POCs), and to provide timely decisions when required, normally within five (5) working days of identifying the data or decision requirement.
- A uniformed Marine Corps Study Sponsor representative or Government civilian will accompany the Study Team on out-of-town travel to facilitate base and personnel access and introductions.
- Close coordination among the Study Team, the Study Sponsor, Marine Corps Combat Development Command (MCCDC), and designated POCs and SMEs is expected. This interaction shall include email correspondence and consultations.

1.3.2. Major Factors for Consideration

The Study Team notes the following Major Factors for Consideration identified in the SOW (§ 3.b):

- The study efforts will develop Measures of Effectiveness (MOEs) to quantify any benefits or costs of training collocation or integration. The cost of any relocation will consider one-time costs, recurring annual costs versus any potential long-term savings, and possible Military Construction (MILCON) offsets for any programmed construction (i.e., programmed facilities projects for the Communications School that could be redirected to 29 Palms). Additionally, the study should identify the changes in the number and grade of personnel compared to the current training situation. Consider any benefits, costs, and personnel changes. Recurring costs for Permanent Change of Station (PCS) moves and Temporary Additional Duty (TAD) travel need to be identified.
- The Contractor shall determine if there would be changes to training duration or travel times compared to the current training situation for both schools.

1.4. Methodology

1.4.1. Task Overview

In Tasks 1 and 2, the Study Team familiarized itself with the subject schools, applicable orders and instructions, and other literature bearing on the subject of the study. The Study Team identified, through SME and stakeholder input, the issues of interest to the Marine Corps. The Study Team determined the facility and infrastructure needs of the Communications School, looking at capacity and feasibility, not cost. The analysis of the academic and facilities requirements supported the development of MOEs and two potential Courses of Action (COA) in Task 3.

Task 1 – Literature Review: The Study Team determined the general training requirements for producing military communication officers through the review of current and historical information contained in literature and data provided as Government Furnished Information (GFI), and other sources. The Study Team developed an understanding of the support the Communications School provides to The Basic School,

Officer Candidate School, the Expeditionary Warfare School, the Infantry Officer's Course and other organizations aboard MCB Quantico. Lastly, the Study Team reviewed Base Realignment and Closure (BRAC) literature and other relevant material covering the body of knowledge associated with consolidating bases, military schools, or other military units. The results of Task 1 were recorded in an annotated bibliography (AB) that lists sources and their applicability to the study.

Task 2 – Identify Facility Capacities and Differences: The Study Team researched the training facilities and infrastructure presently supporting communications instruction. The Study Team reviewed the training capacity of MCB Quantico and 29 Palms and the feasibility of supporting increased instruction. The capacity of the base infrastructure, from classroom, administrative and storage space to the supporting establishment of base housing and transportation support were reviewed. Any evident deficiencies in the existing training environments were noted. The Study Team identified the capacity of 29 Palms to absorb the facility and infrastructure demands of the Communications School.

Task 3 – Develop Measures of Effectiveness: Based on the preceding research and analysis, the Study Team developed MOEs to quantify any benefits or limitations of moving the Marine Corps Communications School to 29 Palms. The results of Task 3 also outlined two (2) COAs for further analysis in Tasks 4 and 5. One COA addressed the relocation of the entire Communications School to 29 Palms. The second COA allowed some portion of the school to remain at MCB Quantico to address the support the Communications School provides to other tenant units of MCB Quantico.

Task 4 – Determine the Estimated Costs and Cost Savings of Collocating: The Study Team, through data provided through GFI and interviews with SMEs, identified operating and support cost elements for the Communications School and MCCES at 29 Palms. The Study Team computed appropriate costs for the COA identified in Task 3. Cost elements of any relocation include both one-time costs of relocation and recurring annual costs. Any potential long-term savings and possible MILCON offsets for any programmed construction (i.e. programmed facilities projects for the Communications School that could be redirected to 29 Palms) were identified. Recurring costs for PCS moves and TAD travel were identified. Additionally, the Study Team identified the number and grade of personnel required for each COA.

Task 5 – Identify the Non-Quantifiable Impacts of Collocating: Task 5 reviewed and analyzed the data, information, and interview results developed in Tasks 1-4 to identify the intangible and non-quantifiable impacts associated with collocating or integrating the Communications Schools, including any cultural consequences and implications of relocation. The Study Team conducting SME interviews to determine the potential impacts within each of the identified subject areas.

Task 6 – Document Study Findings: The Study Team prepared a Draft Final Report and Final Report. The reports include the Annotated Brief, a one-page abstract, and an executive summary.

1.5. Study Organization

This report incorporates the first five tasks described above into seven corresponding chapters. These chapters will be accompanied by supporting appendices and

electronic files that are identified in the Table of Contents. Chapters are titled as follows:

- Chapter 1: Introduction
- Chapter 2: Task 1 – Literature Review
- Chapter 3: Task 2 – Identify Facility Capacities and Differences
- Chapter 4: Task 3 – Develop Measures of Effectiveness
- Chapter 5: Task 4 – Determine the Estimated Costs and Cost Savings of Collocating
- Chapter 6: Task 5 – Identify the Non-Quantifiable Impacts of Collocation
- Chapter 7: Observations and Recommendations

2. TASK 1: LITERATURE REVIEW

2.1. Introduction

The research effort of Task 1 is critical to pursuing each of the successive tasks in this study and to the successful completion of the study as a whole. Through this literature review, the Study Team has determined the general training requirements for producing military communication officers. The Study Team also developed an understanding of the support the Communications School provides to The Basic School, Officer Candidate School, the Expeditionary Warfare School, the Infantry Officer's Course and other organizations aboard MCB Quantico. The Study Team has reviewed BRAC literature and other relevant material covering the body of knowledge associated with consolidating bases, military schools, or other military units. The results of Task 1 are recorded in an AB provided below.

The AB identifies sources and their applicability to the study. A complete bibliographic citation for all publications used in this analysis is included in the extended bibliography is provided in Appendix B.

2.2. Annotated Bibliography

The AB identifies references and their applicability to the Study, to include data and information obtained from:

- Primary References such as official Marine Corps and Department of Defense (DoD) publications, to include: doctrine, course cards, issuances, messages, mission statements, orders, programs of instruction, and other relevant, primary documentation.
- Primary data sources and systems such as the Marine Corps Training Information Management System (MCTIMS), and the Total Force Structure Management System (TFSMS).
- Secondary References such as previous studies, white papers, articles, briefings, and dissertations related to the subject of this Study.
- Marine Corps SMEs.

Each section of the AB is presented in alphabetical order, with subsection references presented in chronological order.

2.2.1. Primary References

2.2.1.1. Communications School Programs of Instruction (POI)

These documents include Course Descriptive Data (CDD) such as course duration; maximum, optimum, and minimum numbers of students; and instructor staffing and classroom requirements; as well as detailed descriptions of the content taught in each course taught by the Communications School.

2.2.1.2. Marine Corps Doctrinal Publications (MCDPs), Reference Publications (MCRPs), and Warfighting Publications (MCWPs)

Marine Corps doctrine provides the fundamental principles by which military forces or elements thereof guide their actions in support of national objectives. It also explains

how Marine Corps units are designed to function. In this Study, the following Marine Corps doctrinal publications have been reviewed to assess the potential impacts on relocation/collocation of instruction:

- MCDP 6, *Command and Control*, 4 October 1996.
- MCWP 3-40.3, Marine Air Ground Task Force (MAGTF) Communications System, 8 January 2010.

2.2.1.3. Marine Corps Orders

Marine Corps Orders (MCOs) provide overarching policy and deliberate plans of action to guide the direction of the Marine Corps as a whole for a comprehensive array of topics and functions. The Study Team referenced MCOs to develop a complete understanding of the Marine Corps training system and policy.

2.2.1.3.1. MCO 1200.17A, Military Occupational Specialties (MOS) Manual, 4 June 2009.

The MOS Manual contains information on all MOSs and identifies personnel skill requirements. It also publishes skill requirements and Human Resource Development Processes that are necessary to build and maintain personnel inventory to meet the needs of the force. In this Study, the MOS Manual is referenced to assist in understanding MOS core skill requirements.

2.2.1.3.2. MCO 1553.1B, The Marine Corps Training and Education System, 24 May 1991.

This order establishes a Total Force system for training and education in the Marine Corps and delineates responsibilities for the implementation of that system. The order applies to all training and education conducted by all operating force units, supporting training centers, and formal schools; and within formal courses of instruction attended by Marines at schools managed by other military services.

2.2.1.3.3. MCO 1553.2A, Management of Marine Corps Formal Schools and Training Detachments, 3 November 2003

This MCO publishes “management policies and procedures for the establishment and operation of Marine Corps formal schools and training detachments.” The order provides the Study Team an understanding of training standards, training development, and faculty development requirements.

2.2.1.3.4. MCO P1300.8R w/CH 1-8, Marine Corps Personnel Assignment Policy, 4 October 6 1994

This MCO provides “guidance on the assignment and PCS transfers and policy for overseas movement of Marines.” The order provides an understanding of Marine Corps personnel assignment policy.

2.2.1.3.5. NAVMC 3500.37, Train The Trainer Training And Readiness Manual (T3 T&R 11 Manual), 7 February 2008.

The Training and Readiness (T&R) Manual establishes Core Capability METs for standardizing the training provided by Marine Corps Formal Schools Instructors, Curriculum Developers, and Unit Training Managers. It is referenced in this study to assist in determining potential impacts of school collocation.

2.2.1.3.6. MCO P3500.72A, Marine Corps Ground Training and Readiness (T&R) Program, 18 April 2005

This Marine Corps T&R Manual, establishes core capability Mission Essential Tasks (METs) for readiness reporting, and required events for standardized training of Marine and Navy personnel assigned to perform duties associated with a particular career field or unit of a particular type. This order "establishes training standards, regulations, and policies regarding the training of Marines and assigned Navy personnel in ground combat, combat support, and combat service support occupational fields." This order provides the Study Team an understanding of the tenets of Marine Corps individual and unit training.

2.2.1.3.7. MCO 10010.47. Basic Allowance For Subsistence (BAS)

This directive contains the policy for administering BAS within the Marine Corps.

2.2.1.4. Marine Corps Training and Readiness (T&R) Manuals

The contents of the MOS and Occupational Field (OccFld) T&R manuals establish required training standards, regulations, and practices. The T&R manuals also provide tasking for formal schools preparing personnel for service. These were used to understand training needs.

- NAVMC 3500.56, *Communications Training and Readiness Manual*, 24 October 2008.

2.2.1.5. Other Marine Corps Primary Sources

2.2.1.5.1. Annex K (Communications and Information Systems) to AT/FPP-09

This document specifies Communications School support to MCB Quantico Continuity of Operations Plan (COOP) AT/FPP-09, which prescribes actions to be taken aboard MCB Quantico in order to continue mission essential functions without unacceptable interruptions during an emergency.

2.2.1.5.2. CG TECOM msg 302049Z June 09, "Termination of the Training and Education Center of Excellence (TECOE) Program"

This message announces the decision to restructure the Training and Education Center of Excellence (TECOE) program and the resultant decertification of Training and Education Command (TECOM) Centers of Excellence. TECOM formal schools, that were dual-hatted as TECOEs were directed to absorb the current TECOE functions and to maintain military and civilian billet holders in their present TECOE-related duties.

2.2.1.5.3. Marine Corps Installations Strategic Plan: "Bases and Stations are the Fifth Element of the MAGTF," Department of the Navy, 28 June 2004.

This document describes a common vision for USMC bases and stations to align with Marine Corps global strategy and provides a six-year road map to guide infrastructure decisions.

2.2.1.5.4. "MCCES and Communications School C2 Brief," Communications School, 29 June – 1 July 2010.

This briefing provides an in-depth review of Communications School command relationships and organization, as well as individual section functions capabilities, and any issues they may be experiencing.

2.2.1.6. Marine Corps Center for Lessons Learned (MCCLL) Documents

MCCLL is part of Marine Corps Training and Education Command (TECOM), located on MCB Quantico, VA. MCCLL supports the execution by the Commandant of the Marine Corps of his Title X responsibilities (Organize, Train, Equip, and Provide) by conducting assessments of forward area operations and exercises to identify emerging issues, collecting and managing the Marine Corps lessons and tactics, techniques, and procedures (TTP) databases, and reporting findings, trends and issues through verbal, written and electronic media. In this Study, lessons learned, after action reports, and other data available via MCCLL are evaluated for insight into Communications training-related issues within the Marine Corps. As of the time of this report, the Study Team has collected the following relevant documents from the MCCLL repository.

2.2.1.6.1. Dunn, Lt Col J.M.; "Implications of Increased Growth at MCAGCC," Warfighting Development Integration Division, 9 September 1997.

This study identified the costs associated with moving 3d Battalion, 4th Marines from Camp Pendleton to Marine Corps Air Ground Combat Center (MCAGCC), 29 Palms, CA. The study provided an example cost analysis for moving the location of a Marine Corps Unit.

2.2.1.7. Marine Corps Websites

- Marine Corps Communication-Electronics School Site <https://www.29palms.usmc.mil/tenants/mcces/mcceshome.asp>
- Marine Corps Communications School (MCB Quantico) Site <http://www.tecom.usmc.mil/cs/>

2.2.1.8. Defense Base Closure and Realignment Commission (BRAC) Documents (2005)

The 2005 BRAC process involved an analysis of all installations in the United States and its territories. This analysis produced a set of recommendations based on military value. The intention was to align the U.S. base structure with the force structure for the next 20 years.

2.2.1.8.1. DoD Base Closure and Realignment Report (Volume 1), Part 1 of 2: Results and Process, May 2005.

This document provides an overview of the BRAC process and summarizes the results. The Study Team used this document to understand the methodology and selection criteria of the BRAC process.

2.2.1.9. Unified Facilities Criteria

Unified Facilities Criteria (UFC) documents provide planning, design, construction, sustainment, restoration, and modernization criteria, and apply to the Military Departments, the Defense Agencies, and the DoD Field Activities in accordance with

USD (AT&L) Memorandum dated 29 May 2002.[2] UFC are distributed only in electronic media and are effective upon issuance. UFC 2-000-05N (P-80) Facility Planning Criteria for Navy/Marine Corps Shore Installations is the UFC implementation of the former NAVFAC P-80.[3] The UFC provides the standard methodology for computing Basic Facility Requirements (BFRs). BFRs are the shore-based facilities, by category code, necessary to perform the peacetime missions of naval shore activities. A BFR justification is a calculation of an installation's, a command's or a region's facilities allowances based upon planning criteria. The calculation can be modified to accommodate site-specific or unit-specific loading requirements, such as mission, personnel, functions, and equipment.

The Study Team utilized appropriate sections of this document to obtain standards for computing space requirements for different uses. The following sections were used during the study:

100 Series - Operational and Training Facilities

200 Series - Maintenance and Production Facilities

400 Series - Supply Facilities

600 Series - Administrative Facilities

700 Series - Housing and Community

2.2.2. Primary Data Sources

2.2.2.1. Marine Corps Training Information Management System

MCTIMS provides a centralized system for Training Command (TRNGCOM) to manage training requirements documents and school curricula; for schools to develop and maintain course content, schedule courses, and manage students; and for students to register for courses and record course evaluations. MCTIMS contains T&R Manuals, MOS Roadmaps, course content, and class schedules. The Study Team accessed class schedules and the FY 11-15 Training Input Plan (TIP) for use in determining Communication School classroom and supporting space requirements. Items available in MCTIMS were augmented by additional documents provided directly by the Communications School, either to replace outdated documents in MCTIMS, or where the required information was not available through MCTIMS.

2.2.2.2. Total Force Structure Management System

TFSMS is "an enterprise system that combines manpower and equipment data for the purpose of managing the Total Force." It is deemed the primary authoritative Marine Corps source for unit personnel and equipment structure data. TFSMS serves as the primary data source and business process engine for the activities defined in MCO 5311.1C, Total Force Structure Process (TFSP).

TFSMS has the following capabilities that are relevant to this analysis:

- A single operational data store that serves as the central repository for all force structure information.

[2] http://www.wbdg.org/ccb/browse_cat.php?o=29&c=4

[3] https://portal.navfac.navy.mil/portal/page/portal/am/am_hq/au/au_criteriamgmt

- The ability to standardize the structure and equipment for like organizations.

TFSMS contains unit mission statements, organization, manning, and equipment allowance information. It also maps billets from one unit to another where standing relationships exist. TFSMS Table of Organization (T/O) data are used in this Study to support analysis of personnel moves that may be associated with school collocation/integration.

2.2.3. Subject Matter Experts (SME)/Site Visit Interviews

Throughout the Study period of performance (POP), the Study Team communicated with Marine Corps Advocates and Functional Area specialists specified by the Study Sponsor as well as individuals who conduct or support training at each training location. The Study Team referenced meetings, discussions, and data gathered via these SME throughout the Study.

3. TASK 2: IDENTIFY FACILITY CAPACITIES AND DIFFERENCES

3.1. Introduction

In Task 2, the Study Team researched the training facilities and infrastructure presently supporting instruction at the Communications School. This analysis reviewed the training capacity of the Communications School and the feasibility of supporting increased instruction in MCCES facilities at 29 Palms. The analysis included the capacity of the base infrastructure, from classroom space, administrative and storage to the supporting establishment of base housing and transportation support.

3.2. Approach

The basic approach to this Task is to:

1. Identify the facility requirements to support communication training,
2. Compare the facility requirements to Communications School capacity at MCB Quantico, and
3. Compare the facility requirements to the existing MCCES capacity at 29 Palms.

3.2.1. Assumptions Regarding Facility Requirements and Capabilities

The Study Team identified several assumptions that apply to all considerations of facility requirements and capabilities:

- Communications School training will maintain the current level and quality of training as described in the course POIs and the TIP,
- The ability of MCCES to absorb Communications School facilities requirements presumes that it will also maintain the current quality of training for ongoing MCCES courses, and
- Facility requirements identified in this Task are based on conducting training during normal working hours.

3.2.2. Categories of Facility Requirements and Capabilities

The Study Team identified five distinct categories of communication training facilities and infrastructure:

- Training infrastructure: includes classrooms, ranges, training facilities, and training areas.
- Administrative Spaces: facilities required by the Communications School for organic administrative functions, including personnel administration, command functions, and organic printing services.
- Spaces required for the Enlisted Instructor Platoon (EIP). This unit provides enlisted communications personnel to support the various Communications School courses by providing instruction, equipment, and other training support. The EIP requires administrative and other spaces to perform this mission, maintain and prepare organic equipment, and maintain MOS proficiency.
- Supply Spaces: facilities necessary for Communications School supply personnel to receive, warehouse, issue, recover, and ship materiel (including unit property, repair parts and secondary repairables) in support of the training mission.

- Billeting and Messing: lodging accommodations and dining facilities for students and permanent personnel.

3.2.3. Data Sources for Facility Requirements and Capabilities

The data sources used in this analysis included:

- CDDs for all Communication School courses, for identifying classroom space requirements,
- Schedules for all 2010 classes, which were used to provide data for the number of students that must be provided billeting and messing and number of instructors that require lounge space at any one time,
- Communications School T/O, which was used to determine administrative, instructor, and EIP personnel space requirements as well as billeting and messing requirements,
- Data provided by the Communications School and MCCES on existing facilities types, sizes, and usage,
- UFC 2-000-05N (P-80) Facility Planning Criteria for Navy/Marine Corps Shore Installations (UFC implementation of the former NAVFAC P-80) which provides planning criteria for: operational and training facilities; maintenance and production facilities; supply facilities; administrative facilities; and housing and community, and
- Data obtained through the Cost Benefit Analysis (CBA) of Collocating the US Army Signal Center and the USMC Communication Electronics School at Fort Gordon, GA Study.

3.3. Communications School Facility Requirements

Training infrastructure includes classrooms and support spaces, ranges and training areas, billeting and messing, administrative space, and space required to support the various activities of the EIP.

3.3.1. Classroom and Support Space Requirements

The Study Team calculated training infrastructure space requirements for classrooms, support space, and training facilities based on UFC documentation and specifications received from the Communications School.

3.3.1.1. Classroom Requirements

The Communications School teaches five courses, two for communications officers, and three for communications warrant officers. Table 3-1 summarizes the characteristics of these courses.

Table 3-1. Communications School Courses

Course	Duration (Training Days)	Classes Per Year	Maximum Number of Students per Class	Classrooms Required
Basic Communications Officer Course (BCOC)	105	2	90	One Automated Electronic Classroom and five conference rooms
Advanced Communications Officer Course (ACOC)	53	2	50	One Automated Electronic Classroom and four conference rooms
Communications Network Management Warrant Officer Course	45	1	10	Deployable Integrated Technical Systems (DITS) Lab
Network Operations & Systems Officer Course	48	1	10	Router Lab
Telephone Network Management Warrant Officer Course	45	1	10	Switch Training Facility (STF) Lab

Communications School classroom requirements are based on the specific requirements of each course and the way specific classrooms are used. Each CDD specifies the number and type of classrooms required for a single iteration of the course.

UFC Category Code Number (CCN) 171 *Training Buildings* defines sizing criteria for several categories of training facilities that are relevant to Communications School classroom requirements.[4] BCOC and ACOC require conference rooms in addition to large classrooms. UFC CCN 610 *Administrative Buildings* defines sizing criteria for conference rooms.[5]

The Communications School requires dedicated classrooms with permanently installed demonstrations, mock-ups, equipment, or special teaching aids. These classrooms are not conveniently set-up for teaching other courses. According to UFC CCN 171, the required space is computed as follows:

NSF[6] Requirement = Number of pupils per course in classroom * Allowance by type

In the analysis of classroom requirements, the Study Team assumed the following:

- Classroom requirements are based on a standard 8 hour training day during normal working hours,

[4] UFC 2-000-5N, 171 Training Buildings, para. 171-1

[5] UFC 2-000-5N, 610 Administrative Buildings, para. 61010-9.2

[6] NSF (Net Square Feet): the size of the interior of a space. Here, NSF refers only to the size of the individual classrooms, conference rooms, and labs.

- Classrooms and associated conference rooms are reserved for the course duration for both ACOC and BCOC , and
- Warrant Officer Communications Course (WOCC) will use the ACOC classroom and conference rooms where a large classroom or break-out rooms are required during early weeks of combined instruction per the three relevant POIs (In the current schedule of classes, the ACOC and WOCC classes do not overlap.)

The Study Team computed the total classroom space required for each course based on UFC and Communications School course CDDs. Applying the UFC basis to compute space for each type of classroom yields the results in Table 3-2.

Table 3-2. Communications School UFC-based Classroom Space Requirements

Course	Classroom	UFC Type	Max Students	Required Classrooms	UFC NSF Standard per Student	Required NSF per Classroom (Student x Std)	Total NSF (Classrooms x per room NSF)
BCOC	Automated Electronic Classroom	Modified Academic Classroom (171-2.1.6)	90	1	45	4,050	4,050
BCOC	Conference Room	Conference Room (61010-9.2)	19*	5	NA[7]	500	2,500
ACOC	Automated Electronic Classroom	Modified Academic Classroom (171-2.1.6)	50	1	45	2,250	2,250
ACOC	Conference Room	Conference Room (61010-9.2)	14*	4	NA[8]	375	1,500
Communications Network Management Warrant Officer Course	DITS Lab	Workbench Lecture Space (171-2.1.3)	10	1	150	1,500	1,500
Network Operations & Systems Officer Course	Router Lab	Workbench Lecture Space (171-2.1.3)	10	1	150	1,500	1,500
Telephone Network Management Warrant Officer Course	STF Lab	Workbench Lecture Space (171-2.1.3)	10	1	150	1,500	1,500
						Total Classroom Space Requirement	**14,800**
*Includes instructor.							

[7] 61010-9.2 provides a fixed NSF for a range of persons rather than on a per person basis.
[8] Ibid.

The Communications School provided the Study Team with requirement specifications for the ACOC classroom, DITS Lab, STF Lab, and Router Lab. The Communications School also indicated that the existing BCOC classroom as well as existing conference rooms spaces were adequate for executing its training mission. The Study Team utilized these data to specify the classroom space requirements for each course, as shown in Table 3-3. The UFC-based requirements are repeated for comparison. Of note is that the Communications School-specified requirement is less than the maximum UFC allowance for each course and category of space. Thus, the Study Team used the Communications School-specified requirements as the actual classroom space requirements.

Table 3-3. Communications School-specified Classroom Requirements

Course	Classroom	Communications School-specified Requirement (NSF)	UFC-based Requirement (NSF)
BCOC	Automated Electronic Classroom	2,542	4,050
ACOC	Automated Electronic Classroom	2,000	2,250
BCOC and ACOC	Conference Rooms (existing spaces)	2,666	4,000
Communications Network Management Warrant Officer Course	DITS Lab	1,157	1,500
Network Operations & Systems Officer Course	Router Lab	1,157	1,500
Telephone Network Management Warrant Officer Course	STF Lab	1,157	1,500
Total Classroom Space Requirement		**10,679**	**14,800**

3.3.1.2. Support Spaces

UFC CCN 171 provides allowances for support spaces that include instructor work spaces, an instructor lounge and student break areas.

Table 3-4 summarizes the Communications School support space requirement based on maximum class sizes and numbers of instructors. Instructor work space requirements were based on the number of billets labeled as instructor only, without additional duties; billets with additional duties were classified as requiring administrative space. Instructor lounge space requirements were calculated with the assumption that ACOC and BCOC will break at different times. The student break area requirement is based on the BCOC class size, which is the largest of the Communications School courses. UFC 171-2.2.2 assumes no more than 10 instructors at any one time, which is consistent with ACOC and BCOC requirements.

Table 3-4. Communications School Support Space Requirements

Personnel	Number	UFC Type	UFC NSF Standard per Person	NSF Total
Instructors	5	Instructor Work Space (Table 171-1)	60	300
Instructors	14	Instructor Lounge (Table 171-1)	N/A (fixed)	450
Students (BCOC)	90	Student Break Area (Table 171-1)	6	540
			Total Support Space Requirement	**1,290**

3.3.2. Range and Training Area Requirements

The Communications School provided the Study Team with the training area requirements for the seven field exercises (FEXs) for BCOC and WOCC courses held annually. Each BCOC class conducts three FEXs and the WOCC FEX is conducted once. Each FEX is one week long. The training area requirements are shown in Table 3-5.

Table 3-5. Communications School Training Area Requirements

FEX	Sites	Dimensions (minimum)	Antenna Height Allowance	Other
BCOC FEX I	8	500x500 meters	50 feet	-Dispersed over an area no smaller than 13km squared -Separation from any three sites must be at least 6km, with no one site closer than 3km to any other site.
BCOC FEX II	6	500x500 meters	120 feet	-Dispersed over an area no smaller than 13km squared -Separation from any three sites must be at least 6km, with no one site closer than 3km to any other site.
BCOC FEX III	2	1x1 kilometers	120 feet	
	1	300x300 meters	120 feet	-Separation from the two larger sites must be at least 13km.
WOCC FEX	4	1x1 kilometers	120 feet	-Each site separated from all others by at least 1 mile

Each site described above must be easily accessible by tactical vehicles with trailers and 4x4 Commercial Government Owned Vehicles. Additionally, head facilities must be available, whether Porta-Johns or trenches.

3.3.3. Administrative Space Requirements

The Communications School requires administrative spaces for all the functions of the school headquarters and instruction groups (those personnel who are not allocated space as instructors), and for the staff functions of the EIP.

The Study Team reviewed each billet on the Communications School T/O and identified 32 billets that required administrative space. To determine the administrative space requirements, UFC CCN 171 *Training Buildings* directs the use of UFC CCN 610 *Administrative Buildings* detailed criteria. UFC 610-10 provides several methods for computing requirements for administrative space:

- Average Net Office Floor Area, which addresses only the working space for individuals,
- Average Net Floor Area which allows space for special purpose rooms, conference rooms, local reproduction facilities, storage, snack stand and minor feeding service space, mail rooms, central files and rooms not used directly as office space, and
- Gross Floor Area which allows a per person factor of 162.5 SF per building occupant as a factor when detailed data are unavailable or only an approximation is required; or to compute space requirements based on individual billet roles.

The Study Team employed the Average Net Office Floor Area method for this study, as much of the data available for MCCES spaces specify the size of individual rooms and, therefore, are directly comparable to the results of the Average Net Office Floor Area method. To determine the Communications School's administrative space requirement, the Study Team applied a factor of 100 NSF per administrative billet, resulting in a requirement for 3,200 square feet of administrative space.[9]

3.3.4. Enlisted Instructor Platoon (EIP) Requirements

The EIP currently utilizes three buildings: building 3186 (EIP trailer, housing most offices), building 3185 (the "silver shed" where equipment is prepared and maintained) and building 2177, which is used for various purposes.

The EIP requires administrative, training support, and maintenance space. EIP administrative space requirements are included in the overall Communications School administrative requirements. Training support and maintenance space requirements are discussed below.

3.3.4.1. EIP Training Support Space Requirement

The Data, Radio, and Wire sections of the EIP currently store, assemble, test, prepare, recover, and train on the equipment shown, by Table of Authorized Material Control Number (TAMCN), in Table 3-6 required to support the Communications School courses, including the FEXs conducted over the year. Most of this work is performed in building 3185, 3,284 sq ft of which the Study Team was able to identify as space supporting this activity based on a building layout and usage diagram provided by the Communications School. As UFC criteria do not provide specific guidance on

[9] UFC 2-000-5N, 610 Administrative Buildings, para. 61010-2.1

determining the requirement for this type of space, and based on EIP SME stating that the existing space was adequate, the Study Team used 3,284 as the NSF requirement.

Table 3-6. Communications Training Support Equipment

TAMCN	Description	Quantity
A00122B	CHARGER, BATTERY (SOLDIER PORTABLE CHARGER)	18
A00617G	MAST SECTION	1
A00797G	TACTICAL COLLABORTI	2
A00907G	RECEIVE SUITE	1
A02347G	SATELLITE COMMUNICA	1
A02447G	NETWORK MANAGEMENT	1
A02557G	COMBAT OPERATIONS C	1
A03327G	PHOENIX NETWORK PLANNING TOOL (PNPT)	2
A06527G	CONVERTER FIBER OPT	24
A08197G	GLOBAL COMMAND AND	4
A08877G	JOINT NETWORK MANAGEMENT SYSTEM	2
A08887G	JT NETWORK MANAGEMENT SYS (JNMS-2)	2
A10787G	MULTIPLEXER-COMBINE	8
A12147G	PANEL,PATCHING,COMM	1
A12257G	EPLRS NETWORK MANAG	1
A12607G	NAVIGATION SET,SATE	12
A20427G	RADIO,HIGH FREQUENC	5
A20437G	RADIO SET, MULTIBAND (URBAN)	14
A20787G	RADIO SET	1
A20787GR	RADIO SET	13
A21527G	RADIO SET	4
A21677G	RADIO SET	3
A21687G	RADIO SET	2
A25057G	TELEPHONE SYSTEM	5
A25487G	SERVER,DEPLOYABLE	4
A25557G	ADVANCED FIELD ARTI	2
A26307G	CONTROL-MONITOR SET	1
A26357G	TELEPHONE SET	40
A50167G	REMOTE SUBSCRIBER ACCESS MODULE - TRANSITION SWITCH MODULE (TSM) TRAINING	4
A70807G	TEST SET,RADIO	5
A75177G	TEST SET,RADIO	88
A77057G	POWER SUPPLY 18-30V	2
A80217G	RANDOM DATA GENERAT	5

TAMCN	Description	Quantity
A80237G	TRANSFER UNIT,CRYPT	65
A80727G	TRANSFER UNIT,CRYPT	1
A80767G	TEST FIXTURE	1
A80797G	COMMUNICATION SYSTE	6
A80837G	VOICE TERMINAL	90
A80847GA	KIV 7HSB NETWORK	4
A80897G	T ENC DEV KG 194A	12
A80967G	TEST SET	1
A80977G	STX 34 A	1
A91002B	COMPUTER, GP LAPTOP	96
A91002BB	COMPUTER SYSTEM,DIG	4
H00032E	TELEPHONE SET	40
H00047G	INVERTER,POWER,STAT	10

The Data, Radio, and Wire sections of the EIP, currently consisting of 38 Marines on board[10], occupy 1,612 square feet of space in the EIP Trailer. As EIP SME stated that the spaces were adequate, the requirement per billet in the EIP section is 42.4 (1,612/38) NSF. There are 50 billets in the Data, Radio, and Wire sections of the Communications School T/O, resulting in an additional requirement for 2,120 NSF.

The total requirement for EIP training support space is 5,404 NSF (3,284+2,120).

3.3.4.2. Communications School Ground Communications (GC) Equipment Maintenance Space Requirement

The Maintenance section of the EIP utilizes the equipment shown in Table 3-7 to maintain the GC equipment used to support communications training. The Maintenance section shares a space with the Utilities section in the EIP Trailer. The shared space is 537 square feet and is currently occupied by 17 Marines[11], an average of 31.6 square feet per Marine. As EIP SME stated that the space was adequate, the requirement per billet in the EIP Maintenance and Utilities section is 31.6 NSF. There are 11 billets in the Maintenance section of the Communications School T/O, resulting in a requirement for 348 NSF to support GC equipment maintenance.

Table 3-7. Communications School GC Maintenance Equipment

TAMCN	Description	Quantity
A19567G	MAINTENANCE KIT,ELE	1
A19587G	MAINTENANCE KIT,ELE	1
A28087G	TEST SET OPTICAL CO	2
A70097G	ANALYZER,SPECTRUM	2

[10] MCCES and Communications School C2 Brief," Communications School, 29 June – 1 July 2010, slide 62.
[11] Ibid.

TAMCN	Description	Quantity
A70217G	COUNTER,ELECTRONIC,	2
A70517G	METER,POWER FACTOR	1
A70527G	GENERATOR,SIGNAL	2
A70557G	TEST SET,RADIO FREQ	2
A70577G	OHMMETER	5
A70597G	OHMMETER	5
A70607G	OSCILLOSCOPE	1
A70617G	OSCILLOSCOPE	2
A70727G	ADAPTER,TEST	1
A70807G	TEST SET,RADIO	8
A70817G	TEST SET,TELECOMMUN	2
A70827G	TEST SET,RADIO	2
A70907G	TEST SET,ELECTRICAL	1
A75177G	TEST SET,RADIO	8
A75967G	THIRD ECHELON TEST	1
A77057G	POWER SUPPLY 18-30V	8
A77067G	POWER SUPPLY	8
A79002E	TOOL KIT,ELECTRONIC	8
A79022E	TOOL AND EQUIPMENT	3
A79557G	MAINTENANCE KIT,ELE	1

3.3.4.3. Motor Transport-Engineer (MT-Eng) Equipment Maintenance Space Requirement

The Utilities section of the EIP currently performs operator level maintenance on the Communications School's MT-Eng equipment and relies on external sources for intermediate level maintenance. Table 3-8 provides the Communications School MT-Eng T/O equipment that requires intermediate level maintenance space.

Table 3-8. Communications School MT-Eng Equipment

TAMCN	Description	Quantity
B05797B	LOAD BANK,ELECTRICA – LSH LOAD BANK	1
B05957B	POWER DISTRIBUTION – PD015	4
B06087B	WIRING HARNESS,FIEL – MLK-0000	4
B08917B	GENERATOR SET,DIESE – MEP1040	9
B09807BA	GENERATOR SET,DIESE	1
B27302E	YOKE,TOWING AND LIF – 13216E7991	2
D00177K	LIGHT TACTICAL TRAI - M1102 MCC	14
D00337K	TRUCK,UTILITY - M1152A1B2	1

TAMCN	Description	Quantity
D00347K	TRUCK,UTILITY - M1165A1B3	5
D00857K	CHASSIS,TRAILER - M116A3	14
D08607K	TRAILER,CARGO - M105A2	3
D08627K	TRAILER,CARGO,4 TON - MK105	3
D08807K	TRLR, TANK, WATER, 400 GAL, 1 1/2T, 2-WHL - M149A2	2
D08827K	TRAILER,TANK,WATER, - MK149	2
D11587KA	TRUCK,UTILITY	7
D11587KD	TRUCK,UTILITY	6
D11587KE	TRUCK,UTILITY	13

As discussed in the preceding section, the Utilities section shares space with the Maintenance section and each has a requirement for 31.6 NSF per billet. The Utilities section of the Communications School T/O includes 6 billets, resulting in a requirement of 190 NSF for Utilities section personnel.

3.3.5. Supply Space Requirements

The Communications School Table of Equipment (T/E) contains communication and electronic maintenance equipment, motor transport and engineer equipment, and individual equipment. The communication, electronic maintenance, motor transport, and engineer equipment is held by the EIP, leaving individual equipment as the only equipment requiring supply space. In lieu of a specific space requirement, the Study Team identified, by TAMCN and quantity, the items on the Communications School T/E to be stored, shown in Table 3-9.

Table 3-9. Communications School Individual Equipment Storage Requirement

TAMCN	Description	Quantity
C00722E	INSERT, PROTECTIVE, SMALL ARMS (SAPI)	370
C02602F	PULLOVER, NECK	185
C10552F	CAP,EXTREME COLD WEATHER	185
C10912F	DRAWERS, COLD WEATHER, LTWT	185
C11072F	GLOVES,MEN'S AND WO - SIZE 3	185
C11202F	GLOVES,COLD WEATHER	185
C12502F	PULLOVER,POLAR FLEE	185
C12612F	UNDERSHIRT, COLD WEATHER, SILK WEIGHT	370
C21702E	GOGGLES,BALLISTIC	185
C21712E	GOGGLES,INDUSTRIAL	185
C30402F	BELT, EQUIPMENT, INDIV, COTTON WEBBING, OD	185
C30602E	CANTEEN,WATER	370
C30702E	CARRIER,INTRENCHING	185
C31242F	HELMET COVER, REVERSIBLE, WDLAND & DESERT	185

TAMCN	Description	Quantity
C31302F	COVER, CANTEEN, WATER, COTTON, OD	370
C31402E	CUP,WATER CANTEEN	185
C31502F	FIRST AID KIT,INDIV	185
C32152E	HELMET,GROUND TROOP - XS	185
C32302E	INTRENCHING TOOL,HA	185
C32702F	LINER, WET WEATHER, PONCHO	185
C33102E	MAT,SLEEPING	185
C34002F	PONCHO, WET WEATHER, CAMO, WOODLAND	185
C34142E	TENT, CMBT	50
C34212F	MODULAR SLEEP SYSTE	185
C34452F	SUSPENDERS, BELT, INDIV EQUIPMENT (LINCLOE)	185
C34942F	BODY ARMOR OUTER	185
C54402F	IMPROVED LOAD BEARING EQUIPMENT (ILBE)	185
C56522F	PARKA,COLD WEATHER	185
C66322F	TROUSERS,COLD WEATHER	185

3.3.6. Billeting and Messing Requirements

The Communications School requires billeting and messing for students and permanent personnel.

3.3.6.1. Student Billeting Requirements

The Communications School student billeting requirement is based on the maximum class size for course schedules. Based on simultaneous ACOC and BCOC classes and an assumption that the ACOC would be evenly split between company- and field-grade officers, the Study Team determined that the maximum billeting requirement is 115 company grade officers and 25 field grade officers.

3.3.6.2. Permanent Personnel Billeting Requirement

The Study Team determined the number of military permanent personnel requiring housing, including the total number of associated dependents using the data in Table 710-2, Navy and Marine Corps Personnel Averages in UFC 2-0000-5N, as shown in Table 3-10.[12]

Table 3-10. Communications School Personnel Billeting Requirements

Pay Grade	% Married	Avg. Number of Dependents per Service Member	Communications School T/O	# Service Members Requiring Housing	# Service Members and Dependents	Require Bachelor Housing
O5	93.10%	3	1	0.9	3.7	0.1

[12] UFC 2-0000-5N 710 FAMILY HOUSING Design Criteria: MIL-HDBK-1035, Table 710-2 Navy and Marine Corps Personnel Averages.

Pay Grade	% Married	Avg. Number of Dependents per Service Member	Communications School T/O	# Service Members Requiring Housing	# Service Members and Dependents	Require Bachelor Housing
O4	89.40%	2.9	3	2.7	10.5	0.3
O3	77.80%	2.4	10	7.8	26.5	2.2
O2	53.60%	1.7	0	0	0	0
W	89.00%	3.1	3	2.7	10.9	0.3
		Total	**17**	**15**	**52**	**2**
E9	89.80%	2.8	1	0.9	3.4	0.1
E8	88.60%	3.1	2	1.8	7.3	0.2
E7	85.40%	3.1	5	4.3	17.5	0.7
E6	81.70%	2.8	9	7.4	27.9	1.6
E5	72.60%	2.3	19	13.8	45.5	5.2
E4	49.00%	1.7	25	12.3	33.1	12.8
E3	25.70%	1.4	19	4.9	11.7	14.1
E2	11.80%	1.4	0	0	0	0
E1	7.80%	1.4	0	0	0	0
		Total	**80**	**46**	**147**	**34**
		Grand Total	**97**	**61**	**199**	**36**

The Study Team also determined the space required for housing enlisted and non-commissioned officers (E1-E5). UFC 2000-5N 721 Bachelor Housing – Enlisted Quarters (PN) describes quarters in terms of modules. [13] A module is 56 square meters (602.78 square feet) and the number of personnel per module is based on rank. The requirement for the Communications School E1-E5 population is 20 modules, for a total of 12,056 square feet, as shown in Table 3-11.

Table 3-11. Communications School E1-E5 Permanent Personnel Billeting Requirement

Pay Grade	Personnel	Number per Module[14]	Modules Required	Square feet per module	Billeting Square Feet
E1-E4	27	2	14	602.78	8,439
E5	6	1	6	602.78	3,617
				Total	**12,056**

[13] UFC 2000-5N 721 Bachelor Housing – Enlisted Quarters (PN), Table 72111-A Navy Permanent Bachelor Enlisted Quarters
[14] 2006 Marine Corps BEQ Campaign Plan, 9 November 2006

3.3.6.3. Student Messing Requirement

Since all BCOC, ACOC and WOCC students are officers and entitled to BAS, there is not a requirement for student messing.[15]

3.3.6.4. Permanent Personnel Messing Requirement

Communications School permanent party officer, Staff Non-Commissioned Officer (SNCO), and Marines granted permission to reside with dependents, or Marines granted permission to reside in commercial quarters off base when government quarters are not available, are entitled to BAS and therefore are not included in messing requirements.[16] Based on the number of permanent party enlisted personnel in bachelor housing, the Study Team estimated the messing requirement to be 33 permanent enlisted personnel. Based on a utilization factor of 90% for permanent parties in remote locations specified in UFC Table 72210-A (personnel to be served by mission) of *UFC 2-000-05N 722 Bachelor Housing – Mess and Conference Facilities*, the daily student messing requirement is 30 per meal.

3.3.7. Recap of Communications School Requirements

Table 3-12 summarizes by category all Communications School facilities and infrastructure requirements.

Table 3-12. Communications School Facility Requirements Summary

Type of Space	NSF	Notes and Other Requirements
Classroom	10,679	
Support	1,290	
Training Areas		Per Table 3-5.
Admin Space	3,200	
EIP Training Support Space	5,404	
EIP Ground Communications Equipment Maintenance Space	348	Equipment to be maintained per Table 3-6
EIP MT/Eng Maintenance Space	190	Equipment requiring intermediate level maintenance per Table 3-8.
Supply		5,970 items of individual equipment per Table 3-9
Bachelor Student Billeting		140 students maximum at any one time
Bachelor Officer and SNCO Permanent Party Billeting		1 Officer, 3 SNCO
E1-E5 Permanent Party Billeting	12,056	33 Service Members
Permanent Party Family Housing		61 Service Members (plus 199 Dependents)
Messing		30 Service Members

[15] MCO 10110.47. Basic Allowance For Subsistence (BAS), para. 3.
[16] Ibid, paras. 3 and 4.

Type of Space	NSF	Notes and Other Requirements
Total Facility Space Requirement	33,167	

3.4. Infrastructure Capacities at MCB Quantico and 29 Palms

This section compares the ability of MCCES/29 Palms and Communications School/MCB Quantico to satisfy the requirements developed in section 3.3.

3.4.1. Classroom and Support Space Capacities

This section discusses the capacities of Communications School and MCCES to support Communications School classroom and support space requirements.

3.4.1.1. Communications School Classroom and Support Space Capacities

The Communications School currently operates 2 classrooms, 12 course-related conference rooms, and 3 workbench lecture spaces for a total of 8704.5 net square feet, with an additional 812 square identified as instructor space. No instructor lounges or student break areas are provided. Communications School personnel have indicated that these spaces are adequate to support training requirements.

3.4.1.2. MCCES Classroom and Support Space Capacities

As documented in a previous study, MCCES does not have sufficient classroom or support spaces to satisfy its own training requirements during normal working hours.[17] The MCCES classroom space shortfall is 1,180 square feet and the support space shortfall is 14,109 square feet.[18] These findings are supported by MCCES responses to Study Team inquiries regarding the ability of MCCES to support specific Communications School requirements, shown in Table 3-13.

Table 3-13. MCCES Ability to Accommodate Classroom Requirements

Course	Facility	MCCES Ability to Accommodate
BCOC	Classroom	Cannot be accommodated without displacing existing training
BCOC	Conference Rooms (5)	Cannot be accommodated
ACOC	Classroom	Cannot accommodate without displacing existing training
ACOC	Conference Rooms (4)	Cannot be accommodated without displacing existing training
Communications Network Management Warrant Officer Course	DITS Lab	Cannot be accommodated without displacing existing training

[17] Cost Benefit Analysis of Collocating the United States Army Signal Center of Excellence and the United States Marine Corps Communication Electronics School at Fort Gordon, GA. 8 October 2010. Study conducted by Northrop Grumman under Contract #M00264-06-D-0001, Delivery Order #19.
[18] Ibid. Table 4-12.

Course	Facility	MCCES Ability to Accommodate
Telephone Network Management Warrant Officer Course	STF Lab	Cannot be accommodated without displacing existing training
Network Operations & Systems Officer Course	Router Lab	Cannot be accommodated without displacing existing training

3.4.2. Range and Training Area Capabilities

This section discusses the capacities of Communications School and MCCES to support Communications School range and training area requirements.

3.4.2.1. MCB Quantico Range and Training Area Capabilities

The Communications School currently conducts the field exercises at MCB Quantico and reports no shortfalls in capability.

3.4.2.2. 29 Palms Range and Training Area Capabilities

The Study Team identified five training areas at 29 Palms of sufficient size to satisfy the Communications School's requirements described in paragraph 3.3.2: Acorn, East, Gypsum Ridge, Sandhill, and West. MCAGCC Range Control provided usage data for each training area aggregated over FY10, as shown in Table 3-14. Detailed data covering shorter time periods, such as weeks or days, are not available.

Table 3-14. 29 Palms Training Area Utilization

Training Area	Available (days)	Scheduled (days)	Utilized (days)	Facility Utilization
ACORN	364	243	169	46.4%
EAST	364	244	179	49.2%
GYPSUM RIDGE	364	260	182	50.0%
SANDHILL	364	279	221	60.7%
WEST	364	231	149	40.9%
Total	1820	1257	900	49.5%

Based on the available utilization rates, the overall training area availability rate is just over 50% (920 days), adequate to support seven week-long FEXs.

3.4.3. Administrative Space Capacities

Table 3-15 shows the Communications School space requirements along with the total administrative space at the Communications School and the available administrative space at MCCES.

Table 3-15. Communications School Administrative Requirements and Availability

Administrative Billets in T/O	Required Space (NSF)	Total Communications School Administrative Space (NSF)	Available MCCES Administrative Space (NSF)
32	3,200	5,900	13,213[19]

These figures indicate sufficient capacity exists at both the Communications School and MCCES to satisfy the Communications School administrative space requirement.

3.4.4. Capacities to Support EIP

This section discusses the capacities of Communications School and MCCES to support Communications School EIP requirements.

3.4.4.1. MCB Quantico EIP Training Support Space Capacity

EIP SME indicated that the existing spaces are adequate for its mission.

3.4.4.2. MCCES EIP Training Support Space Capacity

MCCES indicated that it does not have available space required for EIP training support activities.

3.4.4.3. MCB Quantico GC Equipment Maintenance Space Capacity

The Communications School provided their existing space as the basis for the requirement and stated it is adequate for their requirements.

3.4.4.4. MCCES GC Equipment Maintenance Space Capacity

MCCES reported that sufficient space exists in its GC maintenance facility to accommodate the 11 Marines identified as ground electronics maintenance personnel in the Communications School T/O and the GC maintenance equipment in the T/E.

3.4.4.5. MCB Quantico MT-Eng Equipment Maintenance Space Capacity

The Basic School at Quantico currently provides intermediate level maintenance for Communications School's motor transport and engineer equipment.

3.4.4.6. 29 Palms MT-Eng Equipment Maintenance Space Capacity

MCCES indicated that Combat Logistics Battalion 7 (CLB-7) has sufficient capacity to provide intermediate level maintenance for Communications School's motor transport and engineer equipment.

3.4.5. Supply Space Capacities

The supply space requirement is satisfied aboard MCB Quantico by the National Capital Region Rapid Issue Facility (RIF).

MCCES indicates that existing storage space in its supply facility is sufficient for holding the equipment identified in Table 3-9.

[19] Ibid. Table 4-17.

3.4.6. Billeting and Messing Capacities

This section discusses the capacities of Communications School and MCCES to support Communications School billeting and messing requirements.

3.4.6.1. Billeting and Messing Capacities

3.4.6.1.1. Student Billeting

Officers attending BCOC are already on PCS orders to Quantico since The Basic School (TBS) is 26 weeks long. Bachelor BCOC students are entitled to Basic Allowance for Housing (BAH) and are housed on the economy. Married officers attending BCOC accompanied by dependents can continue to reside in base housing or are entitled to continue to draw allowances for housing off base.

ACOC students and all warrant officers are in a TAD status and are assigned to the Quantico Bachelor Officer Quarters (BOQ).

The BOQ at Liversedge Hall, the quarters appropriate to the rank of Communications School students, has 72 TAD transient rooms, and Harry Lee Hall has 16 field grade TAD transient rooms. Bachelor students that cannot be accommodated in these two BOQs are billeted on the economy.

If the Communications School were to relocate to 29 Palms, due to the length of BCOC, BCOC students would PCS to 29 Palms to attend the course. Bachelor and family housing at 29 Palms is addressed in the next two sections.

3.4.6.1.2. Bachelor Housing

During the site visit, Communications School personnel indicated that Training Command Headquarters and Services Company has sufficient capacity to satisfy the enlisted and non-commissioned officer permanent party bachelor billeting requirement.

MCCES indicated that it could accommodate the estimated 33 additional enlisted and non-commissioned officers in its permanent personnel billeting space.

MCCES provided data on officer and SNCO bachelor housing capacity and occupancy, shown in Table 3-16. These data were accompanied by statements that indicated that: there is no officer BOQ or Staff NCO Bachelor Enlisted Quarters (BEQ) space for permanent personnel aboard 29 Palms; the space identified is considered "transient, space-available" and is not guaranteed for any length of time; and BOQ/SNCO BEQ space is planned but any MILCON will be no earlier than FY14.

Table 3-16. Bachelor Housing Capacity and Occupancy

Type	Number of Housing Units	Occupancy Rate
Field and Company Grade	64	99%
SNCO	108	99%

3.4.6.1.3. Family Housing

DoD policy relies first upon the economy around military bases as the source of housing for military members.[20] As part of their planning process, Services conduct periodic Housing Market Analyses (HMAs) to establish baseline requirements in determining on-

[20] DOD 7000.14-R, Volume 2b, Chapter 6, para. 060105 B.1

base Family Housing needs. Shortfalls in categories of off-base housing necessary to support a specific installation's families become the basis for determining the installation's Family Housing requirements. This routine, regular process of reviewing requirements against capabilities is managed by HQMC LFF-3 (Housing Branch), and would be the mechanism to assess total housing capacity and make appropriate adjustments to requirements in the event that the decision is taken to move the Communications School to 29 Palms.

As an indication of Public Private Venture (PPV) housing availability aboard MCB Quantico and MCB 29 Palms, the approximate wait times, obtained from Quantico's and 29 Palms' websites, are shown in Table 3-17.[21,22]

Table 3-17. PPV Estimated Family Housing Wait Times (Months)

MCB Quantico			MCB 29 Palms				
Grade	Number of Bedrooms		Grade	Number of Bedrooms			
	3	4		2	3	4	5
E1-E5	2-3	1-1.5	E1-E3	2-5	0-3	6-9	Not listed
			E4-E5	3-6	1-4	6-9	Not listed
E6-E8	2-4	Indefinite	E6-E9	Not listed	6-9	5-8	12-18
E9	Indefinite	0-1					
Company Grade	2-3	1-2	Company Grade	Not listed	6-9	3-6	Not listed
Field Grade	Indefinite	0-1	Field Grade	Not listed	3-6	3-6	Not listed

To gauge the magnitude of an increase in permanent military personnel on family housing demand at 29 Palms, the Study Team estimated the number of personnel eligible for family housing at 29 Palms using data MCCES provided that identified the number of military permanent personnel stationed at 29 Palms by grade group. Multiplying the number of Marines in each grade in the Marine Corps[23] by the Percent Married data taken from Table 710-2, Navy and Marine Corps Personnel average in UFC 2-000-5N, summing the numbers of active duty Marines and expected numbers of married Marines within each grade group, and dividing the expected number of married Marines by the number of Marines in each grade group yields the expected percentage of married Marines in each grade group, as shown in Table 3-18.

Table 3-18. Percentage Marines Eligible for Family Housing

Grade	# in USMC	% Married	Expected # Married	Grade Group	Expected # Married	# in Grade Group	Expected % Married
O6	686	95.4%	654	Field Grade	5,752	6,311	91.1%
O5	1,868	93.1%	1,739				

[21] http://www.quantico.usmc.mil/activities/display.aspx?PID=49&Section=HOUSING. Accessed 22 October 2010.
[22] http://www.marines.mil/unit/29palms/G4/Family%20Housing/pages/waittime.aspx. Accessed 20 October 2010.
[23] U.S. Marine Corps Concepts and Programs 2010, pp 267 and 272.

Grade	# in USMC	% Married	Expected # Married	Grade Group	Expected # Married	# in Grade Group	Expected % Married
O4	3,757	89.4%	3,359				
O3	5,913	77.8%	4,600	Company Grade	9,072	14,243	63.7%
O2	3,088	53.6%	1,655				
O1	3,278	32.6%	1,069				
W	1,964	89.0%	1,748				
E9	1,591	89.8%	1,429	SNCO	25,272	30,051	84.1%
E8	3,814	88.6%	3,379				
E7	8,869	85.4%	7,574				
E6	15,777	81.7%	12,890				
E5	29,505	72.6%	21,421	NCO	39,715	66,841	59.4%
E4	37,336	49.0%	18,295				
E3	49,790	25.7%	12,796	Enlisted	16,493	85,255	19.3%
E2	23,280	11.8%	2,747				
E1	12,185	7.8%	950				

Applying the expected percent married figures shown in Table 3-18 to the numbers of Marines stationed aboard 29 Palms and comparing the results with the increased demand for family housing created by Communications School personnel indicates that the percent increase in demand for family housing ranges from 0.32% for enlisted personnel to 2.38% for company grade officers with an overall increase of 1.01%, as shown in Table 3-19.

Table 3-19. Expected Increase in Demand for Family Housing

Type	Permanent Military Personnel Stationed at 29 Palms	Expected % Married	Expected Number Married	Expected Number Communications School Married	Expected % Increase in Demand
Field Grade	195	91.1%	177.7	3.6	2.03%
Company Grade	693	63.7%	441.4	10.5	2.38%
SNCO	1,486	84.1%	1,249.7	14.4	1.15%
NCO	4,156	59.4%	2,469.4	26.1	1.06%
Enlisted	7,941	19.3%	1,536.3	4.9	0.32%
Total	14,471		5,874.5	59.5	1.01%

The 2009 HMA for the 29 Palms area indicated a shortfall in family military housing of 971 units in 2009 and a project shortfall of 814 units in 2014.

3.4.6.2. Messing Capacities

Communications School personnel indicated that Bruce Hall, MCB Quantico's Mainside Dining Facility, has sufficient capacity to satisfy the E1-E5 messing requirement.

MCCES provided data on the numbers of each meal served by Littleton Messhall, the dining facility nearest MCCES, during the time period beginning 1 October 2009 and

ending 30 April 2010. This time period included 142 weekday meal counts. The maximum numbers of each meal served were 1,716 breakfasts, 1,852 lunches, and 2,516 dinners. As 2,516 dinners was the largest meal count observed, the Study Team constructed a histogram of the dinner meal count data, shown in Figure 3-1, to determine the frequency of numbers of meals served.

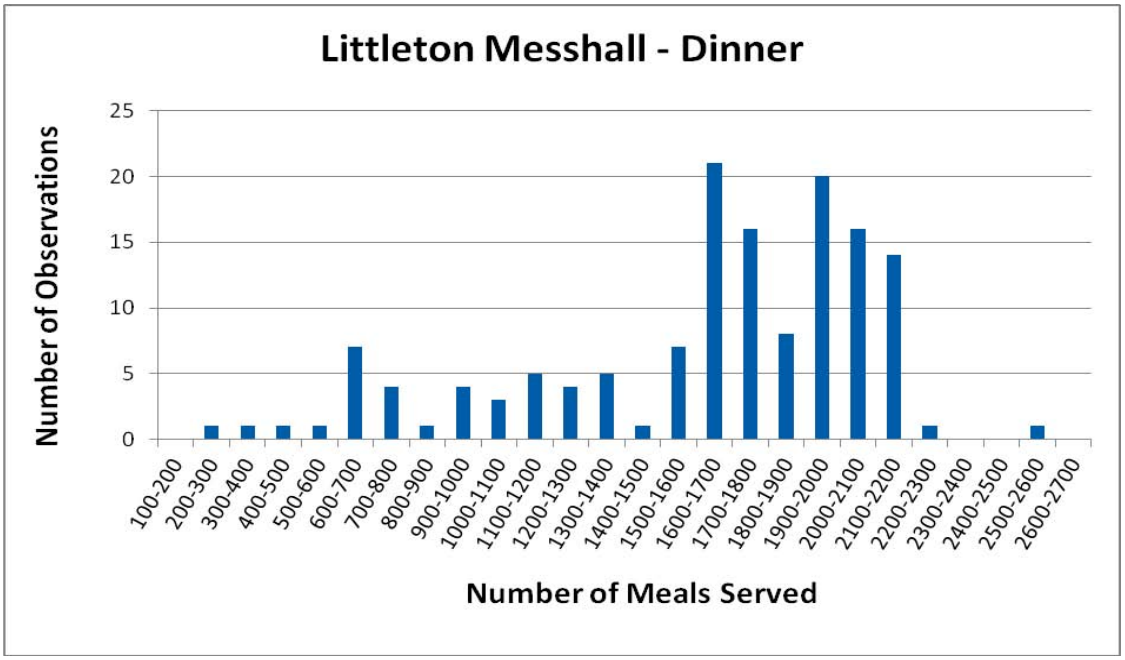

Figure 3-1. Littleton Messhall Weekday Dinners Served

Figure 3-1 shows that on the majority (67%) of days, Littleton Messhall served between 1,600 and 2,200 dinners. The second-largest meal count observed in the sample was 2,223 dinners. If 2,516 is considered to be the maximum meal capacity of Littleton Messhall, these data indicate that an additional requirement of 30 meals per meal can likely be accommodated.

3.5. Summary of Communications Space Requirements and Capacity of 29 Palms

Table 3-20 provides a summary of MCCES/29 Palms ability to satisfy Communications School requirements in the categories examined. Requirements in many of the categories can be accommodated within existing facilities. MCCES reported that it does not have excess capacity to accommodated classroom, support, or EIP training support requirements, resulting in a total shortfall of 17, 373 NSF. The Study Team did not have data regarding availability of family housing in the communities around MCB 29 Palms and, therefore, did not assess whether the permanent party personnel billeting requirement could be accommodated.

Table 3-20. Requirements and Capacity Analysis Summary

Category	Requirement	MCCES/29 Palms Excess Capacity
Classroom and Support	11,969 NSF	None
Training Areas	7 FEXs	Available 50% over the course of a year.
Administrative	3,200 NSF	13,213 NSF
EIP Training Support	5,404 NSF	None
EIP GC Maintenance	11 personnel and test equipment	MCCES can support within existing facilities.
EIP MT/Eng Intermediate Level Maintenance	91 vehicles, trailers, and generators	CLB-7 can support within existing facilities.
Supply	5,970 items of individual equipment	MCCES can support within existing facilities.
Billeting – Student	140 personnel	None available on base. 2009 Housing Market Analysis shows a community shortfall of 971 units for accompanied personnel and 120 units for unaccompanied personnel.
Billeting - E1-E5 Permanent Party	33 personnel	MCCES can support within existing facilities.
Billeting - Officer and SNCO Permanent Party Bachelor Housing	4 personnel	None available on base. 2009 Housing Market Analysis shows a community shortfall of 120 units.
Billeting - Family Housing	61 personnel	2,160 PPV housing units exist with estimated wait times of 0-18 months depending on grade and number of bedrooms. 2009 Housing Market Analysis shows a community shortfall of 971 units.
Messing	30 personnel	MCB 29 Palms can support within existing facilities.

4. TASK 3: DEVELOP MEASURES OF EFFECTIVENESS

In Task 3, based on the preceding research and analysis, the Study Team outlined two Courses of Action for further analysis in Tasks 4 and 5 and developed Measures of Effectiveness to quantify the benefits and limitations of moving the Communications School to 29 Palms.

4.1. Courses of Action

Two courses of action were considered. The first COA addresses the relocation of the entire Communications School to 29 Palms. The second COA allows a portion of the school to remain at MCB Quantico to address the support the Communications School provides to other tenant units of MCB Quantico.

4.1.1. COA 1: Relocation of the Entire Communications School

Under this COA, the entire school and its permanent party would move operations to 29 Palms. Analysis of the COA includes resolving the facility shortfalls identified in Task 2.

4.1.2. COA 2: Relocation of the Communications School with Remain-Behind Element

This COA moves the majority of the current Communications School to 29 Palms, but leaves behind sufficient resources to address base support issues.

At the outset of this study, the Study Team believed that the Communications School provided significant communications OccFld-specific expertise and support to other agencies aboard Quantico. As the study progressed, the Study Team discovered that the Communications School receives tasking to provide Marines from other organizations at Quantico because the Communications School is located at Quantico, and not because of its resident communications expertise.

The only documented requirement for Communications School personnel and assets is specified in Annex K (Communications and Information Systems) to MCB Quantico Continuity of Operations Plan (COOP) AT/FP-09, which prescribes actions to be taken aboard MCB Quantico in order to continue mission essential functions without unacceptable interruptions during an emergency. Specifically, the COOP calls for one AN/VRC-103 or AN/PRC-117 Satellite Communications (SATCOM) radio and the personnel to operate it. The T/E of TBS, a unit located at Quantico which is not tasked in Annex K, contains 3 AN/VRC-103 and 30 AN/PRC-117 SATCOM radios, as well as 44 0621 Field Radio Operators and 3 0629 Radio Chiefs to operate the radios. For this reason, this COA was not considered further in this study.

4.2. Measures of Effectiveness

To assess the benefits of the COA, as it compares with the status quo, and to provide a quantitative means of comparison, the Study Team developed three MOEs.

4.2.1. MOE 1: Change in Table of Organization (ΔT/O)

The proposed COA may require some change in force structure, i.e., an increase or decrease in T/O billets, by rank and MOS, to fulfill necessary duties and satisfy training or support requirements. Where there is a change in force structure, MOE 1, ΔT/O (in # of billets), will quantify the difference between the COA and the status quo.

4.2.2. MOE 2: Cost of Relocating

Cost (in dollars) identifies the one-time costs of relocating, any MILCON costs for addressing facility shortfalls, and possible MILCON offsets for any programmed construction, i.e. programmed facilities projects for Communications School that could be redirected to 29 Palms.

4.2.3. MOE 3: Change in Cost of Operating (∆Cost of Operating)

This MOE captures the cost of operating the Communications School at MCB 29 Palms compared with MCB Quantico. The cost elements include recurring annual costs such as PCS moves, temporary additional duty, printing services, and the direct costs of services and operations at the new location. It requires the comparison of current operating costs with projected future operating costs in order to determine, by cost category, increases or decreases in costs as compared to current operating costs.

5. TASK 4: DETERMINE THE ESTIMATED COSTS AND COST SAVINGS OF COLLOCATING

5.1. Introduction

The Study Team, through data provided by GFI and interviews with SMEs, identified operating and support cost elements for the Communications School at 29 Palms. The Study Team computed appropriate costs for the status quo and the COA identified in Task 3. Cost elements of any relocation include both one-time costs of relocation and recurring annual costs. Any potential long-term savings and possible MILCON offsets for any programmed construction (i.e. programmed facilities projects for the Communications School that could be redirected to 29 Palms) were identified. Recurring costs for PCS moves and TAD travel were identified. Additionally, the Study Team identified potential or recommended changes in the number and grade of personnel required for the COA, as compared to the current training situation.

This chapter begins with a discussion of the potential billet savings that may be realized through the combination of the Communications School and MCCES organizations. As the costs of relocating and operating are affected by the results of the T/O analysis, discussion of the cost analysis follows the discussion of billet savings.

5.2. MOE 1: Change in Table of Organization (ΔT/O)

The Study Team conducted an analysis of the active duty and civilian billets in the organizational structures of both the Communications School and MCCES to determine where possible reductions may be obtained.

The Study Team based its analysis on the following assumptions.

- Commanding Officer, MCCES desires to integrate the Communications School with MCCES B Company to consolidate ground communications training.
- Consolidation must maintain or enhance the training process and support services.
- Duplication of function must be minimized.

The Study Team based many of the recommended billet reductions as a result of discussion during its visit to MCCES on 7-9 December 2010. The report documenting the discussions conducted during the trip is provided in Appendix C.

5.2.1. Overview

The Study Team began its analysis by reviewing the two organizations and attempting to identify the best location in the MCCES organization for each element of the Communications School organization. Figure 5-1 shows the current organization of MCCES, of which the Communications School is already a part. Only the Headquarters Company and B Company (Tactical Communications Training School) are viable MCCES organizations for incorporating Communications School billets. The Study Team considered the TFSMS FY16 billets in each of the Communications School sub-organizations and, through discussions with MCCES personnel and analysis of existing MCCES class schedules, determined where each billet would most appropriately fit into

MCCES. The following sections discuss each of the Communications School elements and the billets within.

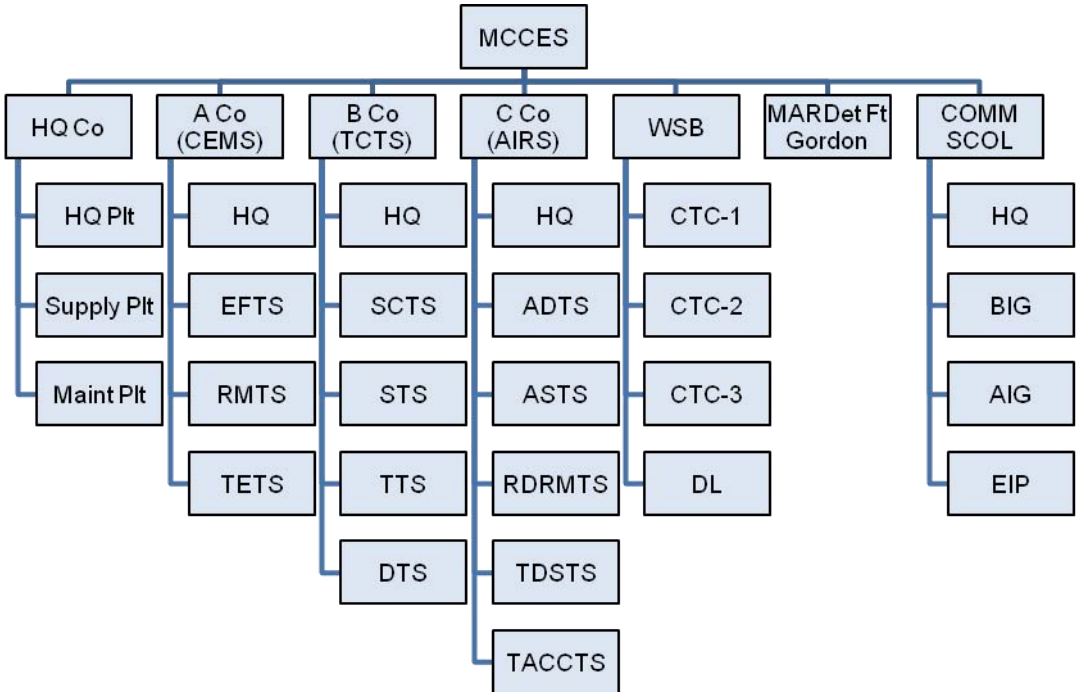

Figure 5-1. MCCES Organizational Structure

5.2.2. Communications School Headquarters Element

The Communications School Headquarters element billets are shown in Table 5-1. Per discussions with MCCES, the Communications School Director would become the Commanding Officer of B Co, replacing the existing B Co Commanding Officer, currently a Major billet. The B Co Major billet would become the B Co Executive Officer, replacing the existing Executive Officer billet, currently a Captain billet. The MCCES Captain Executive Officer billet would become excess structure.

To provide institutional memory and continuity in B Co operations, MCCES indicated that the Communications School Deputy Director billet should be retained as the Deputy Director of B Co. This is consistent with a similar billet in MCCES A Co.

The Communications School Management Analyst billet provides Communications School liaison with Marine Corps Systems Command (MARCORSYSCOM) and ensures that the school maintains awareness of future communications systems. MCCES has a section that performs this function and indicated that it does not require an additional billet.

MCCES has a single secretary billet to support the command. None of the MCCES training companies require secretarial support. In a combined organization, the Communications School Secretary billet is excess structure.

The Communications School Training Specialist billet is the Formal School Manager, responsible for managing the CDD and POI for each course. This billet is supported by an Editorial Assistant (Office Automated Assistant GS5 0326). MCCES indicated that it

could absorb the structure in its Academics Branch to assist with the increased workload the Communications School curriculum would represent. Along with incorporating this structure into the MCCES, MCCES personnel indicated that an existing MCCES billet, Assistant Academics Officer (Captain 2802 MOS), would be surplus structure.

Table 5-1. Communications School Headquarters Element Billets

Grade	Billet Description	Billet MOS / Civilian Job Series	Disposition
OFFICE OF THE DIRECTOR			
LTCOL	DIRECTOR	0602	Retain
GS14	DEP DIR/HEAD ACADEMICS (YA 3)	1712	Retain
GS12	MANAGEMENT ANALYST	0343	Surplus
GS 7	SECRETARY	0318	Surplus
ACADEMICS SECTION			
GS12	TRAINING SPECIALIST	1712	Retain
GS 5	OFFICE AUTOMATED ASSISTANT	0326	Retain
OPERATIONS SECTION			
MAJ	SUPPORT OFF/OPS O/INSTR	0602	Retain
MGYSGT	OPS CHIEF	0699	Surplus
SSGT	CRS CORD CHIEF	0629	Surplus
LCPL	FIELD RADIO OPERATOR	0621	Surplus
SUPPLY FISCAL/ SECTION			
SGT	FIN MGMT RES CHIEF	3451	Surplus
GS 9	BUDGET ANALYST	0503	Surplus
CPL	SUPPLY CLERK	3043	Retain
LCPL	SUPPLY CLERK	3043	Retain
LCPL	SUPPLY CLERK	3043	Surplus
ADMINISTRATIVE SECTION			
SSGT	ADMIN CHIEF	0111	Retain
GS 4	OFFICE SUPPORT CLERK	0318	Retain

Due to the increased size of B Co with the incorporation of much of the Communications School, the Communications School Operations Officer billet, a Major billet, replaces the B Co Operations Officer billet, currently a Captain billet. The MCCES T/O shows a Captain Assistant Operations Officer billet. Thus, the MCCES Captain Operations Officer billet becomes excess structure.

The Communications School Operations Chief billet is excess structure in a combined organization as MCCES already contains an Operations Chief billet. Similarly, the billet labeled “CRS CORD CHIEF” is actually an Assistant Operations Chief, a billet that also already exists in MCCES.

The billet identified as “FIELD RADIO OPERATOR” is the Communications School Training NCO. MCCES indicated that it would not require this billet.

The MCCES Fiscal Officer indicated that MCCES has billets for Financial Management Resource Chief and Budget Analyst and that these two Communications School billets would not be required in a combined organization.

The MCCES Supply Officer indicated the Communications School Supply Clerk (Corporal) billet should be retained in the MCCES Supply section to assist with the increased workload of the Communications School’s equipment. Also, one of the Communications School Supply Clerk (Lance Corporal) billets should be retained in B Co to assist with the increase in B Co budget as a result of adding Communications School instruction. The second Lance Corporal Supply Clerk billet is excess structure.

Lastly, the Admin Chief and Office Support Clerk billets in the Communications School Administrative section are required in the MCCES Command Adjutant Section to handle the increase in the administrative workload.

5.2.3. Communications School Basic and Advanced Instruction Groups

The Basic and Advanced Instruction Group billets are shown in Table 5-2. These billets execute the primary mission of the Communications School and all will be required in any combined organization.

Table 5-2. Communications School Basic and Advanced Instruction Group Billets

Grade	Billet Description	Billet MOS / Civilian Job Series	Disposition
BASIC INSTRUCTOR GROUP			
MAJ	COURSE COORDINATOR	0602	Retain
CAPT	FACAD/INSTR	0602	Retain
CAPT	FACAD/INSTR	0602	Retain
CAPT	FACAD/INSTR	0602	Retain
CAPT	INSTRUCTOR	0602	Retain
CAPT	INSTRUCTOR	0602	Retain
CAPT	INSTRUCTOR	0602	Retain
CAPT	PROJECT MANAGER	0602	Retain
CAPT	CURRICULUM	0602	Retain
GS 5	OFFICE SERVICES ASSISTANT (OA)	0303	Retain
ADVANCED INSTRUCTOR GROUP			
MAJ	COURSE COORD/INSTR	0602	Retain
CAPT	DEPUTY COURSE COORD/INSTR	0602	Retain
CWO4	CRS DEV/EVAL/INSTR	0610	Retain
CWO4	CRS DEV/EVAL/INSTR	0620	Retain
CWO3	CRS DEV/EVAL/INSTR	0650	Retain

Grade	Billet Description	Billet MOS / Civilian Job Series	Disposition
GYSGT	INSTRUCTOR	0619	Retain
SSGT	INSTRUCTOR	0629	Retain
SSGT	TECH CONTROL CHIEF	2823	Retain

5.2.4. Communications School Enlisted Instructor Platoon

The EIP is the largest element of the Communications School, representing 70 of the 105 billets in the Communications School T/O. As the EIP's primary mission is to support the training of Communications Officers, its logical location within the MCCES organization is in B Co to continue direct support to Communications Officer training.

5.2.4.1. EIP Command Element Billets

The EIP Command Element contains the two billets shown in Table 5-3. The platoon commander will continue to be required to provide direction to the platoon's activities, as will the Communications Chief to supervise the activities.

Table 5-3. EIP Command Element Billets

Grade	Billet Description	Billet MOS	Disposition
CAPT	COMM PLT COMMANDER	0602	Retain
MSGT	COMM CHIEF	0699	Retain

5.2.4.2. EIP Maintenance Section Billets

There is no requirement for a maintenance capability within B Co, separate from the Maintenance Branch in the MCCES Logistics Directorate, to support the training conducted for officers. The courses require the availability of operational equipment, but the manner in which maintenance occurs is transparent to the conduct of the class. The MCCES Maintenance Branch functions as the Maintenance Platoon within the Headquarters Company, and includes a range of communications electronics shops organized along functional lines: Ground Radio Repair, Multichannel Equipment Repair, Support Equipment Repair, Terminal Equipment Repair, Crypto Equipment Repair, and TMDE Repair. Each shop is headed by a SNCO Shop Chief (E7 or E6). Subordinate teams are also headed by an SNCO.

The EIP Maintenance Section billets are shown in Table 5-4. In determining the best way to merge these two maintenance capabilities, the Study Team requested an assessment from the MCCES Maintenance Officer, who indicated that the current MCCES maintenance structure can support the additional equipment on the Communications School T/E. However, supporting the large quantities of data/Command and Control (C2) systems during FEXs would require retaining the 2844 and 2847 MOS billets to support that equipment. The 2846 MOS billets would not be required in a combined organization. The 2844 and 2847 MOS billets can be distributed across several of the existing MCCES maintenance shops, eliminating the need for the EIP Maintenance Supervisor billet. Also, as the MCCES Maintenance Branch already contains a Maintenance Chief billet, the EIP Maintenance Chief billet is not required.

Table 5-4. EIP Maintenance Section Billets

Grade	Billet Description	Billet MOS	Disposition
MSGT	MAINT/MMO/CHIEF	2891	Surplus
GYSGT	MAINT SUPERVISOR	2862	Surplus
SGT	TEL/COMP REPAIRER	2847	Retain
SGT	TEL/COMP REPAIRER	2847	Retain
LCPL	TEL/COMP REPAIRER	2847	Retain
SGT	SYSTEMS REPAIRER	2844	Retain
SGT	SYSTEMS REPAIRER	2844	Retain
CPL	SYSTEMS REPAIRER	2844	Retain
SGT	RADIO REPAIRER	2846	Surplus
SGT	RADIO REPAIRER	2846	Surplus
SGT	RADIO REPAIRER	2846	Surplus
CPL	RADIO REPAIRER	2846	Surplus

5.2.4.3. EIP MT/Eng Section Billets

The EIP MT/Eng section, shown in Table 5-5, provides operations and maintenance support for the vehicles and generators used in FEXs. MCCES does not have similar personnel in its T/O. Thus, all billets in the MT/Eng section are required in a combined organization.

Table 5-5. EIP MT/Eng Section Billets

Grade	Billet Description	Billet MOS	Disposition
SGT	MT OPS CHIEF	3531	Retain
SGT	ELECT EQUIP RPR SPEC	1142	Retain
CPL	ENGR EQUIP RPRMN	1341	Retain
CPL	ELEC EQUIP RPRMN	1141	Retain
LCPL	HEAVY VEHICLE OPERATOR	3531	Retain
LCPL	HEAVY VEHICLE OPERATOR	3531	Retain

5.2.4.4. EIP Radio Section Billets

The Communications School provided the Study Team with a detailed accounting of EIP activities for the period 2 August 2010 through 3 December 2010. Each activity specified the performing section, number of Marines required, and a categorization of the activity type. The complete list of activities is provided in Appendix D.

The time span of EIP activity data represented the bulk of the fall BCOC class (20 July 2010 through 17 December 2010, as published in MCTIMS) and included the three FEXs that are part of the BCOC curriculum.

The Study Team considered the instruction mission of the Radio Section and focused on the activities involving student contact. These are shown in Table 5-6. As the data indicate, The Radio Section engages in sporadic activity involving instruction, punctuated by intense activity during FEXs.

Table 5-6. Radio Section Student Contact

Date	Time	Hours	Personnel	Subject	Number of Personnel
02-Aug-10	0800-1600	8	Radio	BCOC D11: (SINCGARS)	15
03-Aug-10	0800-1600	8	Radio	BCOC D12 & S13	15
04-Aug-10	0800-1400	6	Radio	BCOC D14;D15	15
09-Aug-10	0800-1600	8	Radio	BCOC D18 & D21	15
10-Aug-10	0800-1300	5	Radio	BCOC D22	15
18-Aug-10	0500-1900	14	Radio	FEX 1	15
19-Aug-10	0500-1900	14	Radio	FEX 1	15
31-Aug-10	0800-1100	3	Radio	ACOC Radio Demonstration	15
07-Sep-10	1300-1500	2	Radio/Data	ACOC / Swan and WpplD Display	8
13-Sep-10	1300-1600	3	Radio	MUX BCOC CLASSES	15
14-Sep-10	0800-1600	8	Radio	MUX BCOC CLASSES/PA	15
15-Sep-10	0800-1600	8	Radio	MUX BCOC CLASSES/PA	15
16-Sep-10	0800-1600	8	Radio	MUX BCOC CLASSES/PA	15
17-Sep-10	1000-1600	6	Radio	MUX BCOC CLASSES/PA	15
25-Oct-10	0830-1630	8	Radio	SWAN PA	15
26-Oct-10	0830-1630	8	Radio	SWAN PA	15
27-Sep-10	0600-2400	18	Platoon	FEX II	25
28-Sep-10	0001-2400	24	Platoon	FEX II	25
29-Sep-10	0001-2400	24	Platoon	FEX II	25
30-Sep-10	0001-1300	13	Platoon	FEX II	25
15-Nov-10	0600-2400	18	Platoon	FEX III	25
16-Nov-10	0001-2400	24	Platoon	FEX III	25
17-Nov-10	0001-2400	24	Platoon	FEX III	25
18-Nov-10	0001-2400	24	Platoon	FEX III	25

The requirement to support FEXs, in which the entire EIP participates, occupies the majority of the EIP student contact time. During the remainder of the time period, many fewer personnel are required. Therefore, the Study Team investigated the MCCES structure to see if billets with the necessary MOS could be made available to support the FEXs and reduce the number of EIP Radio Section billets. The EIP Radio Section billets are shown in Table 5-7.

Table 5-7. EIP Radio Section Billets

Grade	Billet Description	Billet MOS	Disposition
GYSGT	RADIO CHIEF	0629	Retain
SSGT	RADIO SUPERVISOR	0629	Retain
SSGT	RADIO SUPERVISOR	0629	Retain

Grade	Billet Description	Billet MOS	Disposition
SSGT	MULTI CHANNEL SUPERVISOR	0629	Retain
SSGT	PORTABLE SUPERVISOR	0629	Retain
SGT	RADIO SUPERVISOR	0621	Retain
SGT	RADIO SUPERVISOR	0621	Retain
SGT	EPLRS RADIO OPERATOR	0621	Retain
SGT	EPLRS RADIO OPERATOR	0621	Retain
CPL	FIELD RADIO OPERATOR	0621	Surplus
CPL	FIELD RADIO OPERATOR	0621	Surplus
CPL	FIELD RADIO OPERATOR	0621	Surplus
CPL	FIELD RADIO OPERATOR	0621	Surplus
CPL	FIELD RADIO OPERATOR	0621	Surplus
CPL	FIELD RADIO OPERATOR	0621	Surplus
CPL	EPLRS RADIO OPERATOR	0621	Surplus
CPL	RADIO OPERATOR	0622	Surplus
LCPL	FIELD RADIO OPERATOR	0621	Surplus
LCPL	FIELD RADIO OPERATOR	0621	Surplus
LCPL	FIELD RADIO OPERATOR	0621	Surplus
LCPL	FIELD RADIO OPERATOR	0621	Surplus
LCPL	RADIO OPERATOR	0622	Surplus
LCPL	FIELD RADIO OPERATOR/OPS CLERK	0622	Surplus
LCPL	FIELD RADIO OPERATOR/OPS CLERK	0622	Surplus
LCPL	RADIO OPERATOR	0622	Surplus

The MCCES T/O contains 21 0621 (Field Radio Operator) and 15 0629 (Radio Chief) billets dedicated to teaching the Field Radio Operator Course (FROC). Up to nine instances of FROC are ongoing at any given time, each requiring four instructors. The Study Team compared the FY11 FROC class schedule with the approximate times of each of the BCOC FEXs and found that a sufficient number of the classes could be shifted to the left or right along the timeline such that only five instances of FROC would be in session during each of the FEXs. With four instructors per FROC class and four classes no longer in session, 16 FROC instructors could be made available to support the FEXs, thereby reducing the number of EIP Radio Section billets by the same amount.

This result is consistent with the Study Team discussion with the B Co Operations Officer, who indicated that existing B Co class schedules could be adjusted in order to support the Communications School requirements.

In determining which Radio Section billets should become surplus, the Study Team considered the B Co Operations Officer's opinion that having SNCOs instruct officers is beneficial because SNCOs are the Marines the officers on which will have to rely in their

operational assignments. Therefore, the Study Team preferentially retained the SNCO and NCO billets.

5.2.4.5. EIP Wire Section Billets

Using the methodology described in the discussion of the Radio Section billets, the Study Team began with the EIP Wire Section activities involving contact with students, which are shown in Table 5-8. The data indicate no Wire Section personnel contact with students outside of FEXs.

Table 5-8. Wire Section Student Contact

Date	Time	Hours	Personnel	Subject	Number of Personnel
27-Sep-10	0600-2400	18	Platoon	FEX II	13
28-Sep-10	0001-2400	24	Platoon	FEX II	13
29-Sep-10	0001-2400	24	Platoon	FEX II	13
30-Sep-10	0001-1300	13	Platoon	FEX II	13
15-Nov-10	0600-2400	18	Platoon	FEX III	13
16-Nov-10	0001-2400	24	Platoon	FEX III	13
17-Nov-10	0001-2400	24	Platoon	FEX III	13
18-Nov-10	0001-2400	24	Platoon	FEX III	13

The EIP Wire Section billets are shown in Table 5-9. The Study Team investigated the MCCES structure to identify whether any 0612 (Tactical Switching Operator) and 0619 (Telecommunications Systems Chief) billets could be made available to support the FEXs. While the MCCES T/O contains only 19 0612 and one 0619 billet under the Telephone Systems Installer Maintainer Course (TSIMC) section, the TSIMC CDD documents a requirement for 27 instructors. The FY11 MCCES class schedule shows up to nine instances of TSIMC ongoing at any given time, each requiring three instructors. The Study Team compared the TSIMC class schedule with the approximate times of each of the BCOC FEXs and found that a sufficient number of the classes could be shifted to the left or right along the timeline such that only seven instances of TSIMC would be in session during each of the FEXs. With three instructors per TSIMC class and two classes no longer in session, six TSIMC instructors could be made available to support the FEXs, thereby reducing the number of EIP Wire Section billets by the same amount.

Using the same rationale for preferring SNCOs and NCOs, the Study Team determined that six of the nine Corporal billets would not be necessary in a combined organization.

Table 5-9. EIP Wire Section Billets

Grade	Billet Description	Billet MOS	Disposition
GYSGT	WIRE CHIEF	0619	Retain
SGT	WIRE SUPERVISOR	0612	Retain
SGT	WIREMAN/SB OPR	0612	Retain
SGT	WIREMAN/SB OPR	0612	Retain
CPL	WIREMAN/SB OPR	0612	Retain

Grade	Billet Description	Billet MOS	Disposition
CPL	WIREMAN/SB OPR	0612	Retain
CPL	WIREMAN/SB OPR	0612	Retain
CPL	WIREMAN/SB OPR	0612	Surplus
CPL	WIREMAN/SB OPR	0612	Surplus
CPL	WIREMAN/SB OPR	0612	Surplus
CPL	WIREMAN/SB OPR	0612	Surplus
CPL	WIREMAN/SB OPR	0612	Surplus
CPL	WIREMAN/SB OPR	0612	Surplus

5.2.4.6. EIP Data Section Billets

Table 5-10 shows the EIP Data Section activities involving student contact. As with the Radio Section, the data indicate only sporadic contact with students with intense activity in support of FEXs

Table 5-10. Data Section Student Contact

Date	Time	Hours	Personnel	Subject	Number of Personnel
18-Aug-10	0800-1130	3.5	Data	FEX 1	6
18-Aug-10	1300-1600	3	Data	FEX 1	6
19-Aug-10	0800-1130	3.5	Data	FEX 1	6
19-Aug-10	1300-1600	3	Data	FEX 1	6
03-Sep-10	1100-1330	2.5	Data	DDS-R Static Display	6
07-Sep-10	1300-1500	2	Radio/Data	ACOC / Swan and WpplD Display	8
06-Oct-10	0930-1700	7.5	Data	BCOC Labs	6
07-Oct-10	0930-1700	7.5	Data	BCOC Labs	6
08-Oct-10	0930-1700	7.5	Data	BCOC Labs	6
25-Oct-10	0730-1630	9	Data	WPPL PA	6
26-Oct-10	0730-1630	9	Data	WPPL PA	6
27-Sep-10	0600-2400	18	Platoon	FEX II	12
28-Sep-10	0001-2400	24	Platoon	FEX II	12
29-Sep-10	0001-2400	24	Platoon	FEX II	12
30-Sep-10	0001-1300	13	Platoon	FEX II	12
15-Nov-10	0600-2400	18	Platoon	FEX III	12
16-Nov-10	0001-2400	24	Platoon	FEX III	12
17-Nov-10	0001-2400	24	Platoon	FEX III	12
18-Nov-10	0001-2400	24	Platoon	FEX III	12

The EIP Data Section billets are shown in Table 5-11. The Study Team investigated the MCCES structure to identify whether any 0651 (Data Systems Technician) and 0659 (Data Chief) billets could be made available to support the FEXs. The MCCES B Co

T/O contains 67 0659 billets labeled as instructors. The Data Systems Technician Course (DSTC), with a requirement for 27 0659 instructors, was investigated to determine if the class schedule could be adjusted to support the FEXs. Up to 12 instances of DSTC are ongoing at any given time, each requiring two instructors. The Study Team compared the FY11 DSTC class schedule with the approximate times of each of the BCOC FEXs and found that a sufficient number of the classes could be shifted to the left or right along the timeline such that only 10 instances of DSTC would be in session during each of the FEXs. With two instructors per DSTC class and two classes not in session, four DSTC instructors could be made available to support the FEXs, thereby reducing the number of EIP Wire Section billets by the same amount.

The Cisco Certified Network Associate (CCNA) Course taught by MCCES also contains the requisite 0659 instructor MOS billets. Each CCNA class requires 3 instructors. The MCCES training schedule shows that two instances of the CCNA course frequently occur simultaneously. By adjusting the start and end dates of the classes, MCCES can ensure that one of the two classes is not in session during one of the FEXs and, thereby, free up three 0659 instructors. Thus, an additional three EIP Data Section billets are not required in a combined organization.

Using the same rationale for preferring SNCOs and NCOs, the Study Team determined that seven of the nine EIP Data Section Lance Corporal and Corporal billets would not be necessary in a combined organization.

Table 5-11. EIP Data Section Billets

Grade	Billet Description	Billet MOS	Disposition
GYSGT	DATA SYSTEMS CHIEF	0659	Retain
SSGT	DATA SYSTEMS CHIEF	0659	Retain
SGT	DATA SYSTEMS TECHNICIANS	0651	Retain
SGT	DATA SYSTEMS TECHNICIANS	0651	Retain
CPL	DATA SYSTEMS TECHNICIANS	0651	Retain
CPL	DATA SYSTEMS TECHNICIANS	0651	Surplus
CPL	DATA SYSTEMS TECHNICIANS	0651	Surplus
LCPL	DATA SYSTEMS TECHNICIANS	0651	Surplus
LCPL	DATA SYSTEMS TECHNICIANS	0651	Surplus
LCPL	DATA SYSTEMS TECHNICIANS	0651	Surplus
LCPL	DATA SYSTEMS TECHNICIANS	0651	Surplus
LCPL	DATA SYSTEMS TECHNICIANS	0651	Surplus

5.2.4.7. EIP Summary

The discussion of the EIP shows that fully half of the 70 billets in the EIP structure can be returned to the Marine Corps for use elsewhere. Six of the retained billets are absorbed into the MCCES Maintenance Branch. The remaining 29 billets become part of B Co, four more than the 20-25 EIP billets that the B Co Commanding Officer estimated would be required if the two schools were combined.

5.2.5. Change in Table of Organization Summary

Table 5-12 summarizes the results of the Change in Table of Organization analysis of the Communications School billets. The Communications School organization can potentially be reduced by 40 active duty billets and three civilian billets. In addition, the MCCES structure can be reduced by three Captain billets for a total reduction of 43 active duty billets.

Table 5-12. Change in Communications School T/O Summary

Grade	Current	Potential	Reduction
LTCOL	1	1	0
MAJ	3	3	0
CAPT	10	10	0
CWO4	2	2	0
CWO3	1	1	0
MGYSGT	1	0	1
MSGT	2	1	1
GYSGT	5	4	1
SSGT	9	8	1
SGT	19	15	4
CPL	25	8	17
LCPL	19	4	15
Total Active Duty	**97**	**57**	**40**
GS14	1	1	0
GS12	2	1	1
GS9	1	0	1
GS7	1	0	1
GS5	2	2	0
GS4	1	1	0
Total Civilian	**8**	**5**	**3**

5.3. MOE 2: Cost of Relocating

Cost (in dollars) identifies the one-time costs of relocating, any MILCON costs for addressing facility shortfalls, and possible MILCON offsets for any programmed construction, i.e. programmed facilities projects for Communications School that could be redirected to 29 Palms.

All costs shown are in FY11 dollars. Inflation factors used to inflate/deflate costs to equivalent costs are the raw OSD factors[24]. Airfare costs are based on FY 11 GSA City

[24] http://www.ncca.navy.mil/services/JIC_Inflation_Calc_FY11_Ver1a.xls

Pair Program Fares. Per Diem costs are based on published FY11 Per Diem Rates[25]. For locations with seasonal variations in lodging rates, the monthly weighted average rate is used. Costs are rounded to the nearest whole dollar.

5.3.1. Planning and Coordination Meetings

In undertaking such a move, a certain amount of preplanning and coordination would be required in order for the evolution to be successful. Such planning and coordination meetings would consist of reviewing planning and coordination assignments, facility assignments, proposed concept of operations, and revisions to Tables of Organization and Equipment. While the majority of the coordination would be expected to be completed via e-mail or VTC facilities, the Study Team assumed that several face-to-face meetings would occur, particularly early in the transition effort. For the purposes of this analysis, it was assumed two separate meetings would be held at 29 Palms, attended by four personnel from Communications School. Each meeting would be three days in duration with a travel day on either end. Two personnel would share a rental car. Meals and Incidental Expenses (M&IE) rates would be paid at 75% of the full rate for first and last days of travel. Table 5-13 shows the calculation of estimated costs for one planning and coordination meeting. The second meeting's costs, the following year, would be equivalent.

Table 5-13. Coordination Meeting Costs (FY11$)

Location	Attendees	Duration (days)	Airfare	Lodging	M&IE	Rental Car	Total
29 Palms	4	5	$638	$83	$56	$45	
		Total	**$2,552**	**$1,328**	**$1,008**	**$450**	**$5,338**

5.3.2. Infrastructure – MILCON

Table 5-14 summarizes the number and types of square footage needed to replicate current Communications School operations at 29 Palms, as determined in Section 3.3 and modified based on the reduction in T/O. Note that no Administrative space is required as MCCES has sufficient excess capacity. The NSF must be converted to Gross Square Footage (GSF) to account for circulation and support spaces such as passageways and bathrooms. This accomplished by multiplying the NSF by 1.33.[26]

Table 5-14. Communications School Space Requirements

Type	Requirement (NSF)
Classroom Space	10,679
Support Space	1,290
Administrative Space	0
EIP Training Support Space	4,364
Total Building (NSF)	16,333
Total Building (GSF)	21,723

[25] http://www.gsa.gov/graphics/ogp/FY2011_PerdiemRates.xls
[26] UFC 2-000-5N, 171 Training, Table 171-1, Space Allowances for Instruction Facilities

The GSF was used as input to the estimating methodology in UFC-3-700 Programming Cost Estimates for Military Construction and UFC-3-701-10 DoD Facilities Pricing Guide. For this estimate, the building type used was Academic Instruction Building (High Tech) (Facility Code 1712) with an adjusted cost per square foot of $283.87 (FY11$). This resulted in a basic building cost of $6,166K before application of adjustment factors. Standard adjustment factors specified in UFC-3-701-09, including locality adjustment for 29 Palms (25%), Supervision, Inspection and Overhead (SIOH) (6%), Design (9%), and Risk (5%), were added, which resulted in a final building cost of $9,351,208 (FY11$). No programmed facilities projects for Communications School that could be redirected to 29 Palms were identified.

5.3.3. Infrastructure – Furnishings, Fixtures and Equipment (FF&E)

New construction building outfitting costs were estimated using the Air Force Interior Design Cost Estimating guide[27] as specified in UFC-3-120, Interior Design[28]. Table 5-15 shows the estimated FF&E costs for the new facility based on the assigned functions of the spaces.

Table 5-15. Furnishing, Fixtures and Equipment Costs (FY11$)

Space	NSF	Space Type	$/SF	Cost (FY11$)
Classrooms	10,679	Classroom	22.48	$240,091
Support Spaces	1,290	Admin	12.56	$16,202
EIP Training Support Spaces	4,364	Maintenance	17.6	$76,806
			Total	$333,099
			Installation (13%)	$43,303
			Freight (6%)	$19,986
			Supervision, Inspection and Overhead (6%)	$19,986
			Risk (5%)	$16,655
			Total FF&E	$433,029

5.3.4. Infrastructure – Information Technology

MAGTFTC 29 Palms G-6 staff provided an estimated cost to install information technology infrastructure (phone lines, jacks, network wiring, and drops) based on a notional square footage of 20,000 square feet and 290 LAN connections. The estimated cost is $584,660, which includes 15% for contingencies.

5.3.5. PCS Costs – Military Staff

To estimate the expected PCS costs for Communications School military staff, monthly PCS cost data were extracted from the USN/USMC Visibility and Management of Operating and Support Costs (VAMOSC) database Personnel Costs Universe for FY 2001 through FY 2009. The data were analyzed to provide actual PCS costs, by grade and dependent status. The data, shown in Table 5-16, reflect Navy Personnel, because

[27] Air Force Interior Design Cost Estimating Guide 2002, Table 1, Square Foot Budgeting, www.afcee.af.mil/shared/media/document/AFD-070919-097.pdf
[28] UFC-3-120, Interior Design, Section 3.4.1.1

analysis of the USMC data in VAMOSC revealed anomalies that rendered them unusable for this study. Specifically, if the reported monthly PCS cost was divided by the number of service members receiving payment, the average cost per service member was the same for all grades with and without dependents. These anomalies are recognized shortfalls in the VAMOSC system and are due to the way the data are reported to VAMOSC from USMC personnel systems.

Table 5-16. Historical PCS Costs (FY11$)

Grade	Without Dependents	With Dependents
E-1	$922	$2,640
E-2	$1,496	$3,896
E-3	$2,104	$4,595
E-4	$3,604	$6,676
E-5	$5,703	$8,766
E-6	$7,042	$10,374
E-7	$7,345	$11,250
E-8	$7,507	$11,237
E-9	$7,034	$11,465
W/O	$8,092	$12,568
O-1	$4,908	$9,363
O-2	$7,128	$11,471
O-3	$8,205	$13,511
O-4	$9,849	$16,175
O-5	$10,413	$17,590
O-6	$10,262	$17,259

The historical PCS costs were used to estimate expected Communications School Officer and Enlisted staff PCS costs as shown in Table 5-17. These costs reflect estimated reductions in personnel due to the move to 29 Palms and consolidation of operations with MCCES.

Table 5-17. Military Staff Personnel PCS Costs (FY11$)

Grade	Number	Expected Number with Dependents	Expected Number without Dependents	PCS Cost
O-5	1	0.93	0.07	$17,095
O-4	3	2.68	0.32	$46,515
O-3	10	7.78	2.22	$123,334
Warrant Officers	3	2.67	0.33	$36,226
E-9	0	0	0	$0
E-8	1	0.89	0.11	$10,811
E-7	4	3.42	0.58	$42,721

Grade	Number	Expected Number with Dependents	Expected Number without Dependents	PCS Cost
E-6	8	6.54	1.46	$78,112
E-5	15	10.89	4.11	$118,903
E-4	8	3.92	4.08	$40,872
E-3	4	1.03	2.97	$10,975
			Total Military PCS	**$535,564**

5.3.6. PCS Costs – Civilian Staff Personnel

Government employees who are transferred to new working locations may be entitled to have their relocation costs reimbursed by the Government. In such cases the maximum amount of household goods that can be moved is 18,000 pounds[29], which is equivalent to the PCS weight limit for an O-6. For the purposes of this analysis, the historical PCS cost for an O-6 with dependents ($17,259 FY11$) was used to estimate the PCS cost for a Government Civil Servant. Five civilian billets are required; resulting in an estimated cost of relocation is $86,295.

5.3.7. Relocation - Equipment Move

The Communications School provided a list of equipment that would be relocated to 29 Palms in case of a move. The Study Team gathered weight and volume data for each TAMCN from a study conducted for HQMC Programs and Resources in 2006[30] and SL-1/SL-2 data available from the Logistics Command[31]. In some cases, weight and volume data could not be found and proxy configurations were used to estimate the data. The equipment data used is provided in Appendix E. The particular TAMCNs with proxy weight and cube data are identified as well as the source. Some COTS items were estimated based on representative types available. This data was broken into two parts to reflect different modes of shipment. All D TAMCN items (vehicles and rolling stock) and several other large items (shipping containers, or items that indicated that they were integrated into a vehicle) were grouped together to reflect the fact they would be shipped via flatbed trailer. The remaining Items were grouped together to reflect that they would be shipped via dry vans. For the purposes of this estimate, it was assumed that Communications School personnel would provide the labor to pack, load, unload, and unpack the items as appropriate.

To estimate shipment costs between Quantico and 29 Palms, historical commercial sources freight rate data were obtained from a data vendor[32]. Table 5-18 summarizes average national freight rates by Dry Van and Flatbed, including fuel surcharges, for the last year.

[29] Permanent Change of Station (PCS) Continental US (CONUS) Civilian Resource Guide, www.dfas.mil/pcs/conus.html

[30] MPF(F) Program Refinement. 01 November 2006. Study conducted by Northrop Grumman under Contract # M00264-03-F-0144, Task Order 06-06.

[31] https://logway.logcom.usmc.mil/portal/page/portal/LWAYPORTAL/ONLINE_STOCK_LIST, Accessed January 28, 2011

[32] https://www.truckloadrate.com/customer/National_Total_Charge.htm, Accessed January 15, 2011

Table 5-18. National Freight Rate Costs per Mile

Month	Dry Van Rates	Flatbed Rates
Nov-09	$1.6674	$1.8364
Dec-09	$1.6796	$1.8297
Jan-10	$1.6626	$1.8605
Feb-10	$1.6623	$1.8718
Mar-10	$1.6911	$1.9385
Apr-10	$1.7095	$1.9924
May-10	$1.7349	$2.0384
Jun-10	$1.7359	$2.0446
Jul-10	$1.7249	$2.0233
Aug-10	$1.7392	$2.0324
Sep-10	$1.7362	$2.0086
Oct-10	$1.7539	$2.0244
Nov-10	$1.7884	$2.0307
National Avg Cost Per mile	$1.7143	$1.9640
Distance	2,526.0	2,526.0
Cost FY10$	$4,330	$4,961
Cost FY11$	$4,391	$5,030

Table 5-19 summarizes the estimated number of flatbed trailer loads and costs to move the large items from the TE from Quantico to 29 Palms.

Table 5-19. Large Item Freight Costs (FY11$)

TAMCN	Nomenclature	QTY	Wt (Lbs)	Cubic Feet	Number Carried Per Flatbed	Flat Bed Loads	Cost Per Load	Cost Per Item
B05797	LOAD BANK,ELECTRICA	1	2,020	83.7	5	2	$5,030	$10,061
B08917	GENERATOR SET,DIESE	9	1,220	36.9	5			
D00177	LIGHT TACTICAL TRAI	1	1,175	264.8	4	4	$5,030	$20,122
D00857	CHASSIS,TRAILER	12	1,340	218.8	4			
D08607	TRAILER,CARGO	3	2,694	778.1	3	3	$5,030	$15,091
D08807	TRAILER,TANK	2	2,900	705.7	3			
A00677	RADIO SET	7	10,100	782.1	2	10	$5,030	$50,305
A19577	RADIO SET	13	67,470	6,331	2			
B25667	FORKLIFT,ROUGH,TERR	1	13,450	901.9	1	1	$5,030	$5,030
C44332	SHIPPING AND STORAG	7	1,800	260.0	4	2	$5,030	$10,061
D00227	TRUCK,UTILITY	8	6,400	733.8	2	4	$5,030	$20,122
D01987	TRUCK,CARGO	3	29,100	2,521.7	1	3	$5,030	$15,091

TAMCN	Nomenclature	QTY	Wt (Lbs)	Cubic Feet	Number Carried Per Flatbed	Flat Bed Loads	Cost Per Load	Cost Per Item
					Total Flatbed Loads	23		$145,883

The smaller items have a total weight of 76,820 pounds and occupy 2,933 cubic feet. Additional weight and volume need to be added to account for other items identified by the Communications School, primarily non NMCI Hardware. Table 5-20 shows the estimated weight and volume data for these items.

Table 5-20. Non-NMCI Hardware Weight and Volume

Device	Notional Type	Quantity	Weight	Volume	Total Weight (lbs)	Total Volume (ft^3)
Servers	HP Proliant	4	205	5.2804	820	21.122
Filers	HP Proliant	2	205	5.2804	410	10.561
Computers	HP Thin Client	230	3.4	0.0832	782	19.134
Layer 3 Switches	CISCO	14	15.4	0.3190	215.6	4.466
Layer 2 Switches	CISCO	4	2	0.0444	8	0.178
Routers	CISCO	2	25.1	0.5713	50.2	1.143
Firewall	Fortigate 5060	1	38	1.7920	38	1.792
Printers	HP Laser Jet	13	77.42	4.1059	1006.46	53.377
				Grand Total	3330	112

The total weight of material that must be moved via semi trailer (dry van) is 80,150 pounds occupying a volume of 3,044 cubic feet. Notional usable shipping capacities per semi trailer, according to a commercial trucking company's websites[33], are 29,500 pounds and 3500 cubic feet. Using these limits, the estimated amount of material to be moved is weight limited, not space limited, and will require 4 trucks to move at an estimated cost of $4,391 per shipment, or a total cost of $17,564. Total cost for the movement of Communications School material to 29 Palms is estimated to be $163,447 (FY11$).

5.3.8. Relocation – NMCI Assets

Communications School currently has 59 Computers and 13 printers as part of the NMCI network. Effective FY 11, NMCI is transitioning to NEXGEN, which, in the interim will resemble NMCI in operations and costs. Thus, NMCI published rates were used to estimate costs for Move Add Change (MAC) requests. In accordance with USMC Information Systems Coordinator Training materials concerning MAC requests, a physical move of a user with an asset from one base to another base is priced at $775.00 (CLIN 0106AD). A total of 72 NMCI assets at $775 each results in an estimated cost of $55,800 (FY11$).

[33] http://www.shipnorthamerica.com/htmfiles/equipment.htm, Accessed 15 January 2011

Table 5-21 summarizes the estimated costs to move Communications School to 29 Palms.

Table 5-21. Relocation Cost Summary (FY11$)

		Total
Planning	Coordination Planning Meetings	$10,676
Infrastructure	New construction	$9,351,208
	FF&E	$433,029
	IT Infrastructure	$584,660
PCS	Officers	$223,169
	Enlisted	$302,395
	Civilians	$86,295
Relocation	Equipment Move	$163,447
	NMCI	$55,800
Total Cost of Relocation		**$11,210,680**

5.4. MOE 3: Change in Cost of Operating (ΔCost of Operating)

This MOE captures the cost of operating the Communications School at 29 Palms compared with Quantico. The cost elements include recurring annual costs such as BAH, PCS, temporary additional duty, printing services, and the direct costs of services and operations at the new location. It involves comparing current operating costs with projected future operating costs in order to determine, by cost category, increases or decreases in costs as compared to current operating costs.

5.4.1. Permanent Communications School Staff BAH

This element captures the cost differences between BAH for Permanent Communications School Staff Personnel at Quantico and 29 Palms. The BAH rates used for this analysis were provided by the Defense Travel Management Office (DTMO)[34]. Table 5-22 summarizes the rates by grade, with and without dependents, between the two locations.

Table 5-22. FY11 Monthly BAH Rates

Grade	Quantico without Dependents	Quantico with Dependents	29 Palms without Dependents	29 Palms with Dependents
E-1	$1,140	$1,416	$711	$945
E-2	$1,140	$1,416	$711	$945
E-3	$1,140	$1,416	$711	$945
E-4	$1,140	$1,416	$711	$945

[34] https://www.defensetravel.dod.mil/

Grade	Quantico without Dependents	Quantico with Dependents	29 Palms without Dependents	29 Palms with Dependents
E-5	$1,269	$1,500	$807	$1,032
E-6	$1,344	$1,578	$873	$1,158
E-7	$1,422	$1,704	$957	$1,275
E-8	$1,518	$1,842	$1,059	$1,401
E-9	$1,539	$2,001	$1,134	$1,512
W-1	$1,383	$1,581	$915	$1,161
W-2	$1,515	$1,761	$ 1,056	$1,326
W-3	$1,542	$1,932	$ 1,137	$1,482
W-4	$1,611	$2,028	$1,188	$1,524
W-5	$1,737	$2,142	$1,305	$1,575
O-1E	$1,500	$1,734	$1,032	$1,302
O-2E	$1,533	$1,905	$ 1,095	$1,458
O-3E	$1,578	$2,046	$1,158	$1,530
O-1	$1,332	$1,509	$861	$1,044
O-2	$1,470	$1,575	$1,002	$1,155
O-3	$1,551	$1,923	$1,140	$1,476
O-4	$1,719	$2,184	$1,287	$1,593
O-5	$1,800	$2,370	$1,362	$1,674
O-6	$1,932	$2,394	$1,482	$1,692
O-7	$1,971	$2,415	$1,512	$1,707

Table 5-23 shows the Communications School T/O with the expected value for BAH costs for Quantico and 29 Palms. Expected average Annual BAH costs for Communications School Officer Permanent Party Staff at Quantico and 29 Palms are $395,908 (FY11$) and $297,196 (FY11$) respectively. Permanent Party Enlisted Staff personnel reductions have been identified in Section 5.5 of this study and are reflected in the personnel counts for 29 Palms. Unmarried personnel E-5 and below are expected to reside in Government provided barracks and are not entitled to BAH. Expected average Annual BAH costs for Communications School Enlisted Permanent Party Staff at Quantico and 29 Palms are $871,753 (FY11$) and $389,513 (FY11$) respectively.

Table 5-23. Communications School Permanent Staff BAH monthly costs (FY11$)

Grade	% Married	Number	Number at Quantico with Dependents	Number at Quantico without Dependents	Quantico BAH/ Month	Revised T/O 29 Palms	Number 29 Palms with Dependents	Number 29 Palms without Dependents	BAH 29 Palms/ Month
O-5	93.1%	1	0.93	0.07	$2,331	1	0.93	0.07	$1,652
O-4	89.4%	3	2.68	0.32	$6,404	3	2.68	0.32	$4,682

Grade	% Married	Number	Number at Quantico with Dependents	Number at Quantico without Dependents	Quantico BAH/ Month	Revised T/O 29 Palms	Number 29 Palms with Dependents	Number 29 Palms without Dependents	BAH 29 Palms/ Month
O-3	77.8%	10	7.78	2.22	$18,404	10	7.78	2.22	$14,014
W-4	89.0%	2	1.78	0.22	$3,964	2	1.78	0.22	$2,974
W-3	89.0%	1	0.89	0.11	$1,889	1	0.89	0.11	$1,444
Total Officer		**17**	**14.06**	**2.94**	**$32,992**	**17**	**14.06**	**2.94**	**$24,766**
E-9	89.8%	1	0.90	0.10	$1,954	0	0.00	0.00	$-
E-8	88.6%	2	1.77	0.23	$3,610	1	0.89	0.11	$1,362
E-7	85.4%	5	4.27	0.73	$8,314	4	3.42	0.58	$4,914
E-6	81.7%	9	7.35	1.65	$13,817	8	6.54	1.46	$8,847
E-5	72.6%	19	13.79	5.21	$20,691	15	10.89	4.11	$11,238
E-4	49.0%	25	12.25	12.75	$17,346	8	3.92	4.08	$4,415
E-3	25.7%	19	4.88	14.12	$6,914	4	1.03	2.97	$1,682
E-2	11.8%	0	0.00	0.00	$-	0	0.00	0.00	$-
E-1	7.8%	0	0.00	0.00	$-	0	0.00	0.00	$-
Total Enlisted		**80.0**	**45.22**	**34.78**	**$72,646**	**40**	**26.68**	**13.32**	**$32,459**
Total		**97**			**$105,638**	**57**			**$57,225**

5.4.2. MCCES Reductions in BAH due to School Consolidation

This element estimates the annual BAH costs for MCCES billets identified as surplus. Three MCCES O-3 billets were identified as surplus. Table 5-24 shows the estimated monthly BAH cost is $5,521. The annual BAH cost associated with these billets is $66,255 (FY11$).

Table 5-24. MCCES BAH Costs Associated with Eliminated Billets (FY11$)

Grade	% Married	MCCES T/O Reduction	Number with Dependents	Number without Dependents	29 Palms BAH/Month
O-3	77.8%	3	2.334	0.666	$5,521
TOTAL		3	2.334	0.666	$5,521

5.4.3. Billet Reduction BAH Cost Shift

This element estimates the average annual BAH costs incurred due to reallocation of billets from Communications School or MCCES to elsewhere in the Marine Corps. This element takes into account that, while reduction in personnel to conduct training reflects a local savings in terms of school operations, in reality, it is a shift in costs from the school to the Marine Corps as a whole. Personnel reassigned would now incur BAH costs due their new duty location, and could be assigned to any Marine Corps location. As it is not possible to know or postulate where the surplus billets will be allocated, to account for this cost the Study Team conducted an analysis to determine the average BAH cost across the Marine Corps by grade. The analysis included the number of personnel assigned at each location, percentages for married and unmarried personnel

by grade, and BAH rates by location to develop an average BAH cost by grade. Table 5-25 summarizes the analysis. The analysis assumed that personnel outside the continental United States are assigned to Government quarters and not entitled to receive BAH.

Table 5-25. Average USMC BAH Rates (FY11$)

Grade	Average Monthly BAH (FY11$)
E-1	$107
E-2	$140
E-3	$322
E-4	$609
E-5	$960
E-6	$1,432
E-7	$1,486
E-8	$1,574
E-9	$1,721
W-1	$1,354
W-2	$1,502
W-3	$1,566
W-4	$1,728
W-5	$2,034
O-2	$1,415
O-3	$1,680
O-4	$1,979
O-5	$2,167
O-6	$2,218
O-7	$2,361

Using the average BAH Rates and the reductions in MCCES and Communications School structure, Table 5-26 shows estimates of the expected average costs shifted to the rest of the Marine Corps. The average annual BAH cost shift for the reductions is $363,329 (FY11$).

Table 5-26. Billet Reduction BAH Cost Shift (FY11$)

Grade	Surplus Billets	Average BAH Rate	BAH Cost Shift Per Month
O-3	3	$1,680	$5,040
E-9	1	$1,721	$1,721
E-8	1	$1,574	$1,574
E-7	1	$1,486	$1,486
E-6	1	$1,432	$1,432

Grade	Surplus Billets	Average BAH Rate	BAH Cost Shift Per Month
E-5	4	$960	$3,838
E-4	17	$609	$10,355
E-3	15	$322	$4,831
Total	40	NA	$30,277

5.4.4. Civilian Pay and Benefits

This element estimates the total civilian pay and benefits costs associated with Communications School civilian personnel. For this estimate, the FY11 GS pay schedule Step 5 rates were used to estimate civilian basic pay, before application of locality adjustments and fringe benefit factors. GS pay scales and locality pay factors were obtained from the Office of Personnel Management (OPM)[35]. For Quantico, the locality adjustment factor is 24.22%, while at 29 Palms it is 27.16%. In addition, a fringe benefit factor of 36.25%[36] was added to account for non-pay benefit costs. Table 5-27 summarizes the estimated costs for civilian personnel at Quantico and 29 Palms.

Table 5-27. Communications School Civilian Costs (FY11$)

Grade	Salary (Step-5)	Billets at Quantico	Billets at 29 Palms	Quantico Cost Per Billet	29 Palms Cost Per Billet	Quantico Cost	29 Palms Cost
GS14	$95,989	1	1	$162,461	$166,306	$162,461	$166,306
GS12	$68,310	2	1	$115,615	$118,351	$231,230	$118,351
GS 9	$47,103	1	0	$79,722	$81,608.43	$79,722	$0
GS 7	$38,511	1	0	$65,180	$66,722.34	$65,180	$0
GS 5	$31,087	2	2	$52,615	$53,860	$105,230	$107,720
GS 4	$27,786	1	1	$47,028	$48,141	$47,028	$48,141
					Total Annual Cost	**$690,851**	**$440,518**

5.4.5. Communications School Permanent Party Enlisted Staff Personnel Barracks Costs

This study determined that both Quantico and 29 Palms had existing barracks space to accommodate assigned unmarried E-5 personnel and below. Due to the fact that the spaces were preexisting and costs to maintain and operate those spaces would be incurred whether they were occupied or vacant, it was determined that there is no effective difference in barracks costs at either location and they were not calculated as part of this analysis.

[35] www.opm.gov/oca/payrates *accessed 20 January 2011*

[36] OMB Memorandum M-08-13, Update to Civilian Position Full Fringe Benefit Cost Factor, Federal Pay Raise Assumptions, and Inflation Factors used in OMB Circular No. A-76, “Performance of Commercial Activities" Dated March 11, 2008

5.4.6. Communications School Permanent Party Enlisted Staff (E-5 and Below) Messing Costs

This study has identified potential reductions in the EIP platoon, which could lead to reductions in the costs to feed enlisted Communications School personnel, E-5 and below. However as in the case of reductions to Communications School BAH costs, these cost reductions are only for the Communications School and not the Marine Corps as a whole. The Enlisted Personnel removed from the Communications School T/O would be assigned to other organizations and are still required to be fed. Current CONUS Marine Corps dining facilities are operated by a single company and estimated feedings costs are expected to be approximately equal at any particular location so there would be no cost difference as a function of location.

5.4.7. Communications School TAD Associated with Marine Corps Communications Community

This element estimates the costs of Communications School personnel conducting TDY travel in support of the Marine Corps Communications Community events and maintaining contacts with MCCDC and MARCORSYSCOM.

Table 5-28 shows the one-way airfares between various travel locations relevant to travel costs associated with the Communications School as well as connecting hubs if multiple legs are used, and identifies routes that would be expected to travel via Privately Owned Vehicle (POV) vice commercial air.

Table 5-28. GSA FY11 City Pair Airfares (one way)[37]

Origin	Quantico	Palms Springs	Connection
Arlington	POV	$319.00	
Beaufort	$199.00	$199.00	DCA
Camp Lejeune	POV	$586.00	SFO
Camp Pendleton	$169.50	POV	
Honolulu	$558.00	$849.00	
Las Vegas	$239.00	POV	
Massanutten	POV	$319.00	DCA
New Orleans	$280.00	$332.00	OHR
New York	$52.00	$310.00	OHR
Newport News	POV	$265.00	
Norfolk	POV	$265.00	SFO
Okinawa	$1,509.00	$1,473.00	SFO
Palm Springs	$319.00	POV	
Seattle	$189.00	$149.00	

[37] http://apps.fas.gsa.gov/citypairs/search/index.cfm?ft, Accessed 15 January 2011

Table 5-29 summarizes the FY11 Per Diem Rates[38] for the various locations relevant to Communications School. In cases where Per Diem Rates have seasonal variations, the monthly weighted average rate is shown.

Table 5-29. FY11 Per Diem Rates

	Lodging	Meals	Total
Quantico	$89.00	$56.00	$145.00
29 Palms	$83.00	$56.00	$139.00
Camp Pendleton	$131.00	$71.00	$202.00
Seattle	$139.00	$71.00	$210.00
Camp Lejeune	$88.25	$56.00	$144.25
New York	$222.50	$71.00	$293.50
Las Vegas	$93.00	$71.00	$164.00
New Orleans	$122.75	$71.00	$193.75
Norfolk	$92.00	$61.00	$153.00
Palm Springs	$104.66	$71.00	$175.66
Arlington	$192.00	$71.00	$263.00
Newport News, VA	$77.00	$51.00	$128.00
Standard CONUS	$77.00	$46.00	$123.00
Okinawa	$298.00	$115.50	$298.00
Honolulu	$177.00	$85.00	$262.00
Yuma	$81.00	$46.00	$127.00
Beaufort	$106.50	$61.00	$167.50
Connecticut	$114.00	$71.00	$185.00

Table 5-30 identifies the number trips, location, duration, and number of personnel attending these events in a given year.

Table 5-30. Communications School Community TAD

Purpose	Quantity per year	Duration (total days)	Destination	Number of Travelers
CTAG	2	5	Las Vegas and New Orleans	1
Joint Communications Crs	3	21	Norfolk	1

Table 5-31 shows the distance in miles one way, according to Google Maps, for the various locations relevant to Communications School.[39]

[38] http://www.gsa.gov/graphics/ogp/FY2011_PerdiemRates.xls

[39] The Study Team requested access to the Defense Table of Official Distances, located at https://dtod.sddc.army.mil/default.aspx, on 17 January 2011. On 19 January 2011, the request was denied. On the same date, the Technical Study Project Officer appealed the decision via email. As of the date of this report, no reply was received by the Study Team.

Table 5-31. Table of Driving Distances

To/From	Quantico	29 Palms
Pendleton		151
Camp Lejeune	315	
Las Vegas		178
Norfolk	164	
Palm Springs		51
Arlington	34	
Newport News, VA	150	
Yuma		215

In cases where the mode of travel is by air, estimated travel costs include the appropriate FY11 GSA City Pair airfares identified in Table 5-28 as well as $45 per day for a rental car (if multiple travelers, each rental car will be shared by two people). In cases where the mode of travel is by car, the FY11 mileage rate of $0.51[40] per mile was used to estimate travel costs. Each traveler receives Per Diem appropriate for the travel destination in accordance with Table 5-29. M&IE rates are paid at 75% of the full rate for first and last days of travel[41]. Table 5-32 summarizes the expected costs for this element.

Table 5-32. Estimated Communications Community Travel Costs (FY11$)

Activity	Location	Quantico	29 Palms
CTAG	Las Vegas	$1,345	$873
CTAG	New Orleans	$1,546	$1,650
Joint Communications Course	Norfolk	$9,773	$11,597
	Total	**$12,663**	**$14,119**

5.4.8. Communications School Staff/Training TAD Costs

This element estimates TAD costs associated with staff training events and events related to student training such as Course Content Review Boards (CCRB). Communications School identified relevant events that fit these criteria, however, upon further review, it was determined that relevant events and locations would be expected to different depending on the location of the Communications School. Table 5-33 summarizes the identified staff and student training related events with the Communications School located at MCB Quantico.

[40] Joint Federal Travel Regulations (JFTR), Volume 1, U2600, TDY and Local Travel, Paragraph A.1, TDY Mileage Chart

[41] Joint Federal Travel Regulations (JFTR), Volume 1, U4147, Per Diem for Departure and Return to PDS Paragraph A.,

Table 5-33. Quantico Communications School Training Events

Event name	Quantity per year	Duration (total days)	Destination	Number of Travelers per event	Mode Of Travel
Instructor Training at MCSSS	6	16	Camp Lejeune	1	Drive
PALM SPRINGS	1	7	Palm Springs	1	Fly
BCOC CCRB	1	5	Massanutten	7	Drive
Global Knowledge	25	3 to 5	Arlington	1	Drive
WO FEX Final Planning Conf	1	7	Brooklyn, NY	7	Fly
IA Conf	1	5	Palm Springs	3	Fly
Time-keeper Training	1	3	Newport News	1	Drive
Change of Command	1	3	Brooklyn, NY	2	Fly

Table 5-34 identifies equivalent events if the Communications School were located at 29 Palms.

Table 5-34. 29 Palms Communications School Training Events

Event name	Quantity per year	Duration (total days)	Destination	Number of Travelers per event	Mode Of Travel
Instructor Training at MCSSS	6	16	Camp Lejeune	1	Fly
PALM SPRINGS	1	7	Palm Springs	1	Drive
BCOC CCRB	1	5	29 Palms	7	Drive
Staff Training	25	3 to 5	TBD (In area)	1	Drive
WO FEX Final Planning Conf	1	7	Camp Pendleton	7	Drive
IA Conf	1	5	Palm Springs	3	Drive
Time-keeper Training	1	3	Newport News	1	Fly
Change of Command	1	3	Camp Pendleton	2	Drive

Table 5-35 shows the expected costs for this element.

Table 5-35. Estimated Communications School Staff and Student Related Training Event Travel Costs (FY11$)

Event name	Quantico	29 Palms
Instructor Training at MCSSS	$15,078	$23,543
PALM SPRINGS	$1,972	$1,141
BCOC CCRB	$4,326	$0
WO FEX Final Planning Conf	$14,161	$9,811

Event name	Quantico	29 Palms
IA Conf	$4,303	$2,370
Time-keeper Training	$435	$917
Change of Command	$1,558	$1,187
TOTAL	**$41,834**	**$38,969**

5.4.9. Travel to Communications School by Other Commands

This element estimates the costs other commands incur during normal visits to Communications School. Communications School identified the routine visits in Table 5-36.

Table 5-36. Other USMC Command Routine Travel Events to Communications School

Event name	Departure Point	Number of Travelers	Duration (Days)	Mode of Transport to Quantico	Mode of Transport to 29 Palms
SITE VISIT (MAJ WARD)	Camp Pendleton	1	4	Fly	Drive
GUEST SPEAKER (JAMES GRIFFITH)	Camp Lejeune	1	1	Drive	Fly

Table 5-37 summarizes the estimated costs for this element.

Table 5-37. Estimated TAD Costs for Other Command Visits to Communications School (FY11$)

Event name	Quantico	29 Palms
SITE VISIT (MAJ WARD)	$995	$670
GUEST SPEAKER (JAMES GRIFFITH)	$494	$1,380
Total	**$1,489**	**$2,050**

5.4.10. Communications School Vehicle Support Costs

This element estimates the costs for dedicated administrative vehicle support to Communications School. Communications School has identified a single van, provided by MCB Quantico, which is used to provide support to the school. This vehicle is used to conduct mail runs and passenger transports as needed and is reserved solely for the school's use. If the Communications School were to move to 29 Palms, MCCES also has several vehicles that serve a similar function and a dedicated vehicle for Communications School would not be necessary. Using the FY 11 GSA schedule

rates[42] as shown in GSA Bulletin FPMR G-211, for leased government vehicles, Table 5-38 estimates the annual costs for this vehicle type.

Table 5-38. Annual GSA Vehicle Lease Costs (FY11$)

Description	Equip. Code	FSS	Monthly Rate	Mileage Rate	Annual Miles	Annual Cost
Van, Passenger (7 Pax)	4116	20B	$198.00	$0.19	12,000	$4,656

5.4.11. Communications School Cellular Phone Support Costs

This element estimates all cellular phone support costs in support Communications School operations. Communications School identified an annual cost of $14,400 (FY10$) for Blackberry/Cell Phone support. Based on identified billet reductions in the Communications School T/O due to consolidation at 29 Palms, no reductions are expected in cell phone costs at 29 Palms. The FY$10 cost was inflated to $14,602 (FY11$).

5.4.12. Communications School Information Technology Support Costs

This element estimates all unique information technology supports related to Communications School operations. It does not capture NMCI related support costs, as those costs are equivalent at either operating location. Communications School identified annual costs for CVIC Support ($27,000), Cable TV Service ($3,360), Condortech ($4,815), Global Knowledge (IT Training) ($50,000) and Contractor Support ($145,000) for a total information technology support cost of $230,175 (FY10$). No reductions were anticipated due to consolidation of operations at 29 Palms and the estimated information technology support costs are $233,397 (FY11$).

5.4.13. Communications School Software License Support Costs

This element estimates all identifiable unique software maintenance costs related to Communications School operations. Communications School identified annual costs for SYNCSORT License ($4,601) and FORTIGATE maintenance ($5,667) for a total software licensing cost of ($10,268) (FY10$). No reductions were anticipated due to consolidation of operations at 29 Palms and the estimated software maintenance and licensing costs are $10,412 (FY11$) at both locations.

5.4.14. Communications School Supply - Repair Parts Costs

This element estimates all repair parts costs in support of Communications School operations. Communications School reported annual costs for repair parts (MILSTRIP) for the equipment they operate of $55,227 in FY10. To be conservative, this analysis did not assume and reductions in spare parts consumption due to consolidation at 29 Palms. The estimated annual Supply Repair Parts Costs is $56,000 (FY11$) at either location.

[42] GSA Bulletin FPMR G-211, GSA Fleet Vehicle Service Rates, *www.gsa.gov/graphics/fas/2011CONUSRATEBULLETINFINAL.pdf*

5.4.15. Communications School Supply - Consumable Costs

This element estimates all support costs related to consumables purchased in support of Communications School operations. Communications School reported annual costs for consumables (SERVMART) of $58,260 in FY10. To be conservative, this analysis did not assume and reductions in consumables consumption due to consolidation at 29 Palms. The estimated annual consumable cost is $59,076 (FY11$) at either location.

5.4.16. Communications School Supply - Open Purchase Costs

This element estimates all support cost related to open purchase requisitions in support of Communications School operations. Communications School reported annual costs for open purchase requisitions of $36,681 in FY10. To be conservative, this analysis did not assume and reductions in consumables consumption due to consolidation at 29 Palms. The estimated annual open purchase cost at either location is $37,195 (FY11$).

5.4.17. Communications School – Printing Support Costs

This element estimates all printing and duplication support costs associated with Communications School operations. Communications School identified annual printing costs, through DAPS of $51,212 for 597,299 impressions as well as copier maintenance costs of $6,500 for a total cost of $57,712 (FY10$). In FY11$, the costs would be $58,520. MCCES uses its own printing plant and estimated the cost per impression at $0.02 in December 2010. Using this cost per impression and the reported number of impressions in FY10 of 597,299 results in an estimate annual cost of $11,945 in FY11$, not including copier maintenance costs of $6,591 (FY11$). The total estimated cost for Communications School printing support costs at 29 Palms is $18,536 (FY11$).

5.4.18. Facilities Maintenance

This element estimates all facility sustainment (maintenance and operations) costs for dedicated buildings used by Communications School. Facility sustainment cost factors from UFC-3-701-01 (FY10), which specify average costs per square foot by building type for various services, were used, as were locality adjustment factors from UFC-3-701-01 (FY10). Table 5-39 summarizes the estimated sustainment costs for the Communications School facilities at MCB Quantico.

Table 5-39. Communications School Building Sustainment Costs (FY11$)

Facility	Square Footage	Facility Code	Sustainment Cost /Square Foot (FY11$)	Total Annual Cost
EDSON Hall	21,150	1711	$5.66	$119,715
EIP Trailer	4,506	4421	$2.59	$11,655
White Bldg	2,373	6100	$4.72	$11,190
AIG Trailer	640	4421	$2.59	$1,655
Silver Shed	9,100	4421	$2.59	$23,537
			Total Cost	**$167,752**

Table 5-40 summarizes the estimated sustainment cost for the building to be built to support Communications School at 29 Palms.

Table 5-40. Communications School 29 Palms Building Sustainment Costs (FY11$)

Facility	Square Footage	Facility Code	Sustainment Cost /Square Foot (FY11$)	Total Annual Cost
New Communications School Bldg.	21,723	1712	$4.9587	$107,718

In the event the Communications School were to move to 29 Palms, the buildings currently occupied by the Communications School would still exist and still incur annual O&S costs. The only way the O&S costs to be eliminated is for the existing buildings to be demolished. Therefore, if Communications School were to move to 29 Palms, the annual building sustainment costs would consist of the costs of the existing facilities at Quantico ($167,752) (FY11$) and the sustainment costs for the new building at 29 Palms ($139,467) (FY11$) or $307,219 (FY11$).

5.4.19. BCOC Student PCS Costs

This element estimates the PCS associated with attending BCOC. Currently, BCOC students graduate from TBS at Quantico and then attend BCOC before moving on to their first assignment. Under current practice, only one PCS move is needed. If the Communications School were to locate at 29 Palms, two PCS moves would be required. In accordance with the JFTR, courses of instruction in excess of 20 weeks are PCS.[43] One move would be required to move BCOC students from Quantico upon graduation of TBS and a second PCS move would be required to move those students to their first assignment. Note that some BCOC students would not PCS in a given scenario during the final move, as their first assignment would be in the area where their training took place. Table 5-41 shows that 4.9% of the billets that could be filled by new BCOC graduates are in the Quantico area while 4.0% of the billets are at 29 Palms.

Table 5-41. Distribution of O-2 Communications Officer Billets

Duty Station	Percent of O-2 Communications Officer Billets
Camp Lejeune Area	35.6%
Camp Pendleton Area	32.9%
Okinawa	17.8%
Hawaii	1.8%
Quantico Area	4.9%
Arizona	0.9%
South Carolina	1.3%
Connecticut	0.0%
Norfolk Area	0.4%

[43] Joint Federal Travel Regulations (JFTR), Volume 1, U2145 TIME LIMITATIONS FOR TDY PERIODS (GENERAL), Paragraph A.4

Duty Station	Percent of O-2 Communications Officer Billets
29 Palms	4.0%

Table 5-42 summarizes the estimated annual PCS costs for BCOC students.

Table 5-42. Estimated Annual PCS Costs for BCOC Students (FY11$)

Category	Number Of Students	PCS Costs Per Student	Cost (FY11$)
With Dependents	48	$9,363	$449,413
Without Dependents	102	$4,908	$500,619
Total	150	Total PCS for a Single Move Before Adjustments	$950,032
PCS Costs for Communications School at Quantico			**$903,586**
PCS Costs for Communications School 29 Palms			**$1,862,063**

5.4.20. BCOC Student BAH Costs While Attending Class

This element estimates the BAH costs paid to BCOC students while attending class. Based on information provided by Communications School, most BCOC students reside on the local economy, and 29 Palms support personnel reported that BOQ space was very constrained. For the purposes of this analysis, it was assumed that all BCOC students would reside on the local economy at both Quantico and 29 Palms and collect BAH appropriate to their marital status. Students are in enrolled in class for 105 training days, or 21 weeks, which equates to 4.9 months, assuming 30 days per month. Table 5-43 summarizes the estimated BAH costs for BCOC students.

Table 5-43. Estimated Annual BAH Costs for BCOC Students (FY11$)

Pay Grade	% Married	USMC Annual population	Basic Officer Students w/dep.	Basic Officer Students w/o dep.	BAH Quantico	BAH 29 Palms
O-1	32.0%	150	48	102	$ 1,020,650	$ 675,877

5.4.21. BCOC Student BAH Costs While Awaiting Training

Currently, TBS graduates seven classes a year, while the BCOC graduates two classes a year. As a result, over the course of a year, some students are in an awaiting training status and are assigned to jobs in the local area until the class can start. In determining the number of prospective BCOC students that would be awaiting training, in order to be conservative, it was assumed that TBS graduates (21.4 BCOC students per TBS class on average) would immediately go into awaiting training status in the case where Communications School is located at MCB Quantico. If the Communications School was located at 29 Palms, students would go into awaiting training status one week after graduation from TBS, to allow for travel from Quantico to 29 Palms. Using this assumption, and FY11 class schedules for Communications School and TBS, the expected number of Man Months (one person awaiting training for 30 Days) would be 335.8 in the case of the Communications School at Quantico and 301.2 in the case the

Communications School was at 29 Palms. Table 5-44 summarizes the cost for this element.

Table 5-44. Annual BAH for Students Awaiting Training (FY11$)

Location	Man Months	% Married	Man Months at With Dependent Rate	Man Months at Without Dependent Rate	Annual BAH For Students Awaiting Training
Quantico	335.8	32.00%	107.5	228.3	$466,305
29 Palms	301.2	32.00%	96.4	204.8	$276,971

Changes in these estimates based on alternative assumptions are provided in Appendix F.

5.4.22. ACOC Student Per Diem

This element estimates the Per Diem costs for students attending ACOC. Most ACOC students attend class TAD from their primary duty station. However, 18 students a year attend the course as part of Expeditionary Warfare School (EWS), a course of instruction, which requires a PCS to Quantico. As a result, those 18 students would not be entitled to Per Diem while attending ACOC. Of the remaining students (50), 19.1%, as shown in Table 5-46, of O-3/O-4 0602 billets are in the vicinity of Quantico and would also not be entitled to Per Diem. In the case of 29 Palms, the number of all students attending ACOC whose permanent duty station is in the vicinity is 5.1%. For purposes of this analysis, it was assumed that the students would reside on the local economy, as BOQ availability is limited at both locations. ACOC is 53 days (class days) long, or 74 days including weekends. Table 5-45 summarizes the expected Per Diem Costs for ACOC. Changes in these estimates based on alternative assumptions are provided in Appendix F.

Table 5-45. ACOC Per Diem Costs (FY11$)

Number of Marine Students	Number of Days Per Diem	Number Eligible for Per Diem at Quantico	Number Eligible for Per Diem at 29 Palms
68	74	40.45	64.53
		Per Diem Costs Quantico	Per Diem Costs 29 Palms
		$435,142	$665,570

5.4.23. Advanced Communications Officer Student Travel

This element estimates the travel costs for ACOC students to attend the course. Only students attending the course away from their permanent duty station are eligible for travel cost reimbursement. The expected number of students in this category at each location is shown in Table 5-45. A weighted average round trip travel cost has been calculated for each location based on the distribution of O-3/O-4 0602 billet locations. Table 5-46, summarizes the estimated average ACOC student travel costs. Note that only 86% of the population is represented. The remaining billets are distributed across multiple locations in small numbers away from major Marine Corps installations. The average travel costs associated with those billets was assumed to be the same as the average cost for travel from the major locations.

Table 5-46. Estimated Advanced Communications Officer Student Travel Costs (FY11$)

Origin	Population Distribution	Mode of Travel To/From Quantico	Travel To/From Quantico	Mode of Travel To/From 29 Palms	Travel To/From 29 Palms
Camp Lejeune Area	20.4%	POV	$494	Fly	$1,339
Camp Pendleton Area	19.1%	Fly	$512	POV	$321
Quantico Area	19.1%	N/A	$0	Fly	$805
Okinawa	11.1%	Fly	$3,191	Fly	$3,113
Norfolk Area	5.3%	POV	$338	Fly	$697
Hawaii	5.8%	Fly	$1,289	Fly	$1,865
29 Palms	5.1%	Fly	$811	POV	$0
Weighted Average Travel Cost			$799		$1,139
Applicable Student Population			50		50
Cost			$39,967		$56,863
Number Traveling To/From Quantico			0		18
Cost			$0		$14,490
Total Cost			**$39,967**		**$71,453**

5.4.24. Warrant Officer Student Per Diem

This element estimates the Per Diem costs for students attending the three Warrant Officer Courses (Communications Network Management Warrant Officer Course, Telephone Network Management Warrant Officer Course, and Network Operations and Systems Officer Course). All Warrant Officers attend the Communications School following TBS at Quantico. Communications School has stated that Warrant Officer Students currently attend their respective courses in a TDY status. For purposes of this analysis, it was assumed that the students would reside on the local economy, as BOQ availability is limited at both locations. As such, these students are entitled to Per Diem and reimbursement of travel costs to attend the Warrant Officer course, which are dependent on the location of the course. The Communications Network Management Warrant Officer and Telephone Network Management Warrant Officer Course have a course length of 45 working days each, or 63 days of Per Diem including weekends. Network Operations & Systems Officer Course has a duration of 48 working days, or 66 days of Per Diem including weekends. Table 5-47 summarizes the expected annual Per Diem costs at each location for the Warrant Officer courses taught by Communications School. Changes in these estimates based on alternative assumptions are provided in Appendix F.

Table 5-47. Expected Per Diem Costs for Warrant Officer Courses (FY11$)

Course	Students	Number of Days Per Diem	Per Diem Costs Quantico	Per Diem Costs 29 Palms
Communications Network Management Warrant Officer Course	3	63	$27,405	$26,271
Telephone Network Management Warrant Officer Course	4	63	$36,540	$35,028
Network Operations & Systems Officer Course	2	66	$19,488	$18,682
		Total	**$83,433**	**$79,981**

5.4.25. Warrant Officer Student Travel

This element estimates the travel costs for Warrant Officer students to attend one of the three courses offered by Communications School. As all Warrant Officers attend the Communications School after TBS, the Quantico travel costs only include the cost to get from Quantico to their primary duty station. The 29 Palms travel costs includes the cost to get from Quantico to 29 Palms plus the cost to get from 29 Palms to their primary duty station. A weighted average round trip travel cost was calculated for each location based on the distribution of 0610, 0620 and 0650 Warrant Officer billet locations. Table 5-48 summarizes the estimated average 0610 Warrant Officer Student Travel Costs.

Table 5-48. 0610 Warrant Officer Weighted Average Travel Costs (FY11$)

0610 Warrant Officers	Population Distribution	Travel From Quantico	Travel To/From 29 Palms
Camp Lejeune Area	41.7%	$247	$1,075
Camp Pendleton Area	37.5%	$256	$566
Okinawa	20.8%	$1,596	$1,962
	Weighted Avg. Travel Cost	**$531**	**$1,069**
	Total Cost	**$1,594**	**$3,207**

Table 5-49 summarizes the estimated average 0620 Warrant Officer Student Travel Costs.

Table 5-49. 0620 Warrant Officer Weighted Average Travel Costs (FY11$)

0620 Warrant Officers	Population Distribution	Travel To From Quantico	Travel to From 29 Palms
Camp Lejeune Area	38.9%	$247	$1,075
Camp Pendleton Area	33.3%	$256	$566
Okinawa	27.8%	$1,596	$1,962
	Weighted Avg. Travel Cost	**$625**	**$1,152**
	Total Cost	**$1,249**	**$2,303**

Table 5-50 summarizes the estimated average 0650 Warrant Officer Student Travel Costs.

Table 5-50. 0650 Warrant Officer Weighted Average Travel Costs (FY11$)

0650 Warrant Officers	Population Distribution	Travel To From Quantico	Travel to From 29 Palms
Camp Pendleton Area	29.0%	$256	$566
Camp Lejeune Area	29.0%	$247	$1,075
Quantico Area	12.9%	$0	$808
Okinawa	19.4%	$1,596	$1,962
29 Palms	3.2%	$406	$406
New Orleans	3.2%	$367	$821
Brooklyn	3.2%	$139	$799
Average Travel Cost		**$484**	**$1,026**
Total Cost		**$1,937**	**$4,103**

Table 5-51 summarizes the estimated total annual Warrant Officer Student Travel costs.

Table 5-51. Estimated Warrant Officer Student Travel Costs (FY11$)

Student Type	Travel To From Quantico	Travel to From 29 Palms
0610 Warrant Officer	$1,594	$3,207
0620 Warrant Officer	$1,249	$2,303
0650 Warrant Officer	$1,937	$4,103
Total Warrant Officer Student Travel Cost	**$4,780**	**$9,613**

5.4.26. Operating and Support Cost Comparison Summary

Table 5-52 summarizes the estimated operating and support costs to the Marine Corps between having the Communications School at Quantico and at 29 Palms. Numbers in parentheses in the Difference column represent decreases in costs by moving to 29 Palms. The difference in the total annual cost to the Marine Corps between the two locations is an increase of $225,154 (FY11$). Included in the operating costs at 29 Palms are BAH associated with the billets no longer required in a combined organization ($363,329) and the cost of continued maintenance of the Communications School facilities at Quantico ($167,752). While these costs are still borne by the Marine Corps, the Quantico facilities (37,769 square feet) and the 43 surplus billets can no longer be attributed to providing communications training and become available to address other Marine Corps needs. Thus, the operating costs attributable to communications training actually decrease by $305,927.

Table 5-52. Estimated Operating and Support Costs (FY11$)

Category	Element	Quantico	29 Palms	Difference
Active Duty Permanent Party	BAH	$1,333,916	$686,709	($647,206)
	BAH Cost Shift	$0	$363,329	$363,329
Civilians	Pay/Benefits	$690,849	$440,518	($250,331)
TAD	Comm Community	$12,663	$14,119	$1,456
	Staff Training	$41,834	$38,969	($2,865)
	Other Commands	$1,489	$2,050	$561
Support	Vehicles	$4,656	$0	($4,656)
	Cell Phones	$14,602	$14,602	$0
	IT Infrastructure/support	$233,397	$233,397	$0
	SW Licenses	$5,756	$5,756	$0
	Supply- Repair Parts	$54,795	$54,795	$0
	Supply-Consumables	$59,076	$59,076	$0
	Supply-Open Purchases	$37,195	$37,195	$0
	Printing/Duplication	$58,520	$18,536	($39,983)
	Building Maintenance Quantico	$167,752	$167,752	$0
	Building Maintenance 29 Palms	$0	$107,718	$107,718
BCOC Students	PCS	$903,586	$1,862,063	$958,477
	BAH (Class)	$1,020,650	$675,877	($344,774)
	BAH (MAT)	$466,305	$276,971	($189,334)
ACOC Students	Per Diem	$435,142	$675,038	$239,896
	Travel	$39,967	$71,453	$31,486
Warrant Officer Students	Per Diem	$83,433	$79,981	($3,452)
	Travel	$4,780	$9,613	$4,833
O&S Total		**$5,670,362**	**$5,895,516**	**$225,154**
O&S Attributable to Communications Training		**$5,670,362**	**$5,364,436**	**($305,927)**

6. TASK 5: IDENTIFY THE NON-QUANTIFIABLE IMPACTS OF COLLOCATION

6.1. Introduction

The previous chapter addressed the quantifiable aspects of a possible move of the Communications School to consolidate with MCCES. This chapter discusses the non-quantifiable impacts of collocation. It considers the data, information, and interview results developed in Tasks 1-4 in order to identify the intangible and non-quantifiable subject areas associated with collocating or integrating the schools, including any cultural consequences and implications of any relocation. In the course of the study, the Study Team identified the following areas where collocation could have non-quantifiable impacts:

- Facilitating common training,
- Obtaining external support required for training,
- Producing equipment savings,
- Resolving command relationship issues,
- Supporting the Marine Corps communications community,
- Managing 0601 Lieutenants awaiting training,
- Supporting Marine Corps Base Quantico Anti-Terrorism / Force Protection Plan,
- Relocating civilian personnel to 29 Palms, and
- Housing military families in the 29 Palms area.

The following paragraphs address these topics in a standard structure: Current Situation, Potential Impact, and Assessment.

6.2. Facilitating Common Training

Currently, the staffs of the two schools develop and maintain their course curricula separately, although coordination has increased over time. However, the current physical separation has precluded the integration of officer and enlisted training, so the coordination has been focused on content rather than a more comprehensive integration of the way different courses are presented. The Study Team expects that, if collocation were to occur, the integrated school would be able to coordinate and integrate training in several ways:

- Aligning curriculum content,
- Sharing experiences within the instructor cadre,
- Developing capstone exercises, and
- Reinforcing the relationship between communications officers and SNCOs.

6.2.1. Aligning Curriculum Content

Although the Study Team cannot predict the precise direction of future communications training, trends in emerging technology, professional manuals, and actions ongoing within the military communications world indicate that change in technology, equipment, and techniques will be continuous for the foreseeable future.[44] This will cause continued evolution of content in all communications curricula.

6.2.1.1. Current Situation

The two schools currently develop curriculum content independently using the CCRB as the vehicle for periodic review and revision of course content as specified in the TECOM Structured Approach to Training (SAT) Manual.[45] Although CCRB membership includes both entities, the focus to date has been on ensuring that officer and enlisted courses have content that is appropriate for the target students in accordance with the needs of the operating forces. Physical separation has been a barrier to aligning course content. Discussions with the Communications School staff indicated a desire for technical discussion groups that would begin an open dialogue between training sections at MCCES and the Communications School, with the goal of synchronizing and aligning training between the two schools as appropriate. These discussions implied that where communications Marines of different levels require knowledge of similar TTPs (or Training Events as defined in the Communications T&R Manual), the corresponding course curricula should be similar.

6.2.1.2. Potential Impact

Collocation of the courses and integration of the staffs of the two schools will remove the physical barrier to taking a more comprehensive and integrated approach to training, allowing for activities in one course to support or enhance those in another. For instance, the BCOC syllabus has a block on network security (Annex K), which is similar to the content in Annex D of the Data System Chief Course, and covers some information in the 122 hour M08D2H1 Information Assurance Manager Course[46], as shown in Table 6-1.

[44] Military Communications & COTS Market, 2010-2020, Chapter 4.
[45] TECOM Structured Approach to Training (SAT) Manual, para. 3701.
[46] M09D3H1 Information Assurance Manager Course CDD dtd 2 Feb 2010.

Table 6-1. Course Commonality Example

M02LC52 Basic Communications Officer Course[47]	M09BNU1 Data System Chief Course[48]
Annex K: Network Security (47.75 Hours)	Annex D: Network Security (17 Hours)
This annex introduces students to the Marine Corps Network Operations and Security Center (MCNOSC), the Marine Corps Enterprise Network (MCEN), the network certification and accreditation process, as well as the Information Assurance Manager Level One training levied by Department of Defense Instruction (DoDI) 8570.1M.	This annex covers a variety of Information Technology security subjects. Its purpose is to give students a fundamental understanding of computer network security practices including defense in depth strategies. Topics include Application protocols, Cisco IOS security, Security Protocols, Security Technologies, Network Security Policies, Network Vulnerabilities, and Threats. Additionally, employment of encryption devices for use within secured military networks is also covered.

6.2.1.3. Assessment

Collocation provides an opportunity for closer coordination of course content by individuals with a daily working relationship. It fosters daily coordination and interaction that promotes cooperation among the instructor groups and increases the opportunity to align course content to take advantage of synergies of content and instruction. Collocation will enable the MCCES staff (including the Communications School staff integrated into the MCCES staff) to examine in detail the content of related courses, adjust content, and adjust course schedules to maximize the effective use of instructors and equipment to improve the quality and effectiveness of communications training.

All indicators point to a continued rapid change in communications equipment and TTPs, with a continued trend towards adapting and applying COTS technology and techniques to operational communications requirements. For instance, the TSM is designed to:

> …maintain USMC joint interoperability as the other services transition to COTS switching technologies. The modular design of the TSM provides the capability to add or delete equipment without adversely affecting existing communications architectures. A further goal is to be capable of easily incorporating new communications technology as it evolves.[49]

The Army and Marine Corps are investing heavily in commercial networking technology (hardware and software), and include both Cisco and Microsoft content in their curricula. This trend can be expected continue to standardize portions of course content, both for officers and enlisted. While the exact focus may differ between officers, SNCOs, NCOs and entry level 06XXs, each group will be learning its appropriate body of related

[47] M02LC52 Basic Communications Officer Course CDD dtd 28 Jan 2010.
[48] M09BNU1 Data System Chief Course CDD dtd 2 Feb 2010.
[49] MARCORSYSCOM information sheet on Transition Switch Module (TSM). *www.marcorsyscom.usmc.mil/sites/cins/Fact%20Books/.../TSM.pdf*

knowledge necessary to plan, establish, and maintain complex communications systems in an expeditionary environment.

The Study Team assesses this as a potential positive for relocation.

6.2.2. Sharing Experiences within the Instructor Cadre

6.2.2.1. Current Situation

Both schools have a cross section of communications MOSs on staff as instructors. However, physical separation limits the sharing of individual experiences between the instructor staffs at the two schools. Periodic meetings (e.g. CCRBs) and electronic (email and telephone) contacts provide opportunities for exchanging experiences, but that is no substitute for the close daily contact currently experienced within each of instructor staffs, confirmed during discussions during site visits by the Study Team. The MCCES Operations Officer voiced concern that the separation between the two schools (and their instructor staffs) could result in different lessons being drawn by different instructors, based on different appreciations and operational experiences, leading to different or conflicting course content.

6.2.2.2. Potential Impact

Discussions with staff at both locations indicate that interaction and the exchange of ideas and experiences is valuable to individual Marines, to the training function, and to the Marine Corps communications community as a whole. The desired result should be consistent and well informed instruction based on the exchange and synthesis of different experiences across the communications instructor community. Shared operational and technical experiences will enable a better training result (sending better trained communicators to operational units, with a consistent understanding of appropriate (tools, techniques and procedures (TTPs)), broaden individual and collective exposure to current communications techniques, and provide a path to capturing and passing on “best practices” derived from practical experience. Collocation will promote such interaction and exchange.

6.2.2.3. Assessment

The Study Team assesses this as a potential positive for relocation.

6.2.3. Developing Capstone Exercises

6.2.3.1. Current Situation

Currently, each BCOC conducts three FEXs and the WOCC conducts a single FEX. The only field training conducted at MCCES occurs as part of the Field Radio Operator Course. Officers, SNCOs and entry level personnel train separately, and classes at the different levels do not interact. This is due largely to the physical separation of officer training from enlisted training and the limited course time available for field exercises at MCCES. Training areas are available, but, to date, the need to compress a large amount of content into limited course hours for each particular course has superseded any attempt for an extensive field training event.

The Army perceives value in combined training exercises and conducts a capstone event for each of its courses, stressing communications in a tactical environment. Mercury Fusion is a Training and Doctrine Command-directed 120-hour field training

exercise that constitutes the final annex for all signal Advanced Individual Training courses.[50] This exercise brings together different signal MOSs to perform their respective roles in a Tactical Operations Center. Although it has a tactical component (e.g. standing guard), the Mercury Fusion exercise's primary purpose is to stress the need to combine and coordinate different technical skills to produce a functional communications system.

6.2.3.2. Potential Impact

Collocation could provide real opportunities for developing combined exercises involving officers, SNCOs and entry level students, or combining the efforts and skills of complementary MOS. It can take advantage of common course content and develop a synergy by combining key elements of each course to create and maintain a communications system under conditions that represent the environment that officers, SNCOs and enlisted Marines will encounter in the field. Such an exercise need not be conducted in a training area. By using a facility similar to the one MCCES created for training Ground Communications Organizational Repairers, the exercise could simulate an environment in which each group of students performs duties, encounters and solves problems, and interacts with counterparts in a realistic manner.[51] Such an exercise would stress the necessary interaction between communications managers, supervisors, and operators, showing how each of their technical skill sets complements the others.

6.2.3.3. Assessment

Based on discussions with staff at both locations and an overview of practices at the US Army Signal Center of Excellence, the Study Team expects that, with proper coordination, collocation will set conditions that will allow gradual coordination of courses, resulting in multi-course exercises that will strengthen interaction among the courses.

The Study Team assesses this as a potential positive for relocation.

6.2.4. Reinforcing the Relationship between Officers and SNCOs

6.2.4.1. Current Situation

The EIP currently is staffed with NCOs and junior enlisted who support officer training by setting up equipment, conducting basic operator training and orientation for officer students, and creating operational communications systems to support officer training. On the other hand, communications officers in the Operating Forces routinely interact with, and rely upon, SNCOs with specific technical expertise. SNCO training is conducted at MCCES, and SNCOs do not interact with officers in a training environment as they would in an operational communications unit. The current situation does not expose junior officers to the beginning of the close working relationship that must exist between officers and SNCOs.

[50] "Signal Soldiers Fuse into Corps' Rite of Passage", The Signal, 29 Oct 2010, http://www.fortgordonsignal.com/news/2010-10-29/News_Update/Signal_Soldiers_fuse_into_corps_rite_of_passage.html

[51] M09DSF1 Ground Communication Organizational Repair Course POI, Version 2a

6.2.4.2. Potential Impact

As discussed in paragraph 5.2.4, most junior EIP billets would not migrate to B Co and their functions would be replaced by existing MCCES staff, which has a greater percentage of SNCOs that could be made available to support FEXs by adjusting the MCCES course schedule. This would enable more opportunities for officer students to interact with and understand the value of the technical skills resident in the communications SNCO community.

6.2.4.3. Assessment

Increased contact between officer students and SNCO instructors will better approximate the relationship that officers will find in operational units.

The Study Team assesses this as a potential positive for relocation.

6.3. Obtaining External Support Required for Training

6.3.1. Providing SATCOM Support for FEXs

6.3.1.1. Current Situation

The BCOC FEX 3 and the WOCC FEX require satellite links to simulate communications between MAGTF Major Subordinate Commands. The Communications School obtains this support (equipment and operators) from 6th Communications Battalion, headquartered in Brooklyn, NY. The POI for course M02CHP2, Communications Network Management Warrant Officer Course identifies the items show in Table 6-2 as required for the course but not on hand at the Communications School.[52] The TAMCNs with asterisks are shown as on hand on the MCCES Mechanized Allowance List (MAL).[53]

Table 6-2. Equipment Provided By 6th Communications Battalion

TAMCN	NOMENCLATURE	DESCRIPTION	REQ'D	ON HAND	SHORT
A0499*	AN/TSQ-227	Digital Tech Control (DTC)	1	0	1
A0806	AN/USC-65 (V)1	Lightweight Multiband Satellite Terminal	1	0	1
A0807*	AN/USC-65 (V)2	Lightweight Multiband Satellite Terminal	1	0	1
A0886*	AN/TSQ231	Joint Enhanced Core Communications System (JECCS)	1	0	1
A1380	AS-4429	Lightweight High-Gain X-Band Antenna (LHGXA)	2	0	2
A2535*	AN/TSQ-222	Tactical Data Network (TDN), Gateway	1	0	1
A8088*	Encryptor, Network		3	2	1

[52] POI M02CHP2, pp. 1-4 through 1-7.
[53] MCCES MAL, 5 March 2010.

The POI also states, "Execution of this POI would still be possible even if for some reason this course could not receive the equipment from 6th Communications Battalion."[54]

6.3.1.2. Potential Impact

Relocation of the Communications School could result in several outcomes:

- Support could be obtained from 9th Communications Battalion located at Camp Pendleton or Marine Wing Communications Squadron (MWCS)-38 located at Marine Corps Air Station Miramar,
- The courses could be conducted by using equipment available at MCCES, or
- The courses could be conducted without the equipment.

6.3.1.3. Assessment

Even though the WOCC POI states that the equipment is not essential to training, Communications School personnel indicated that the SATCOM addition to the FEXs is a valuable part of the training. Since MCCES personnel indicated that multiple means exist to satisfy the training requirement, the Study Team does not consider this a significant issue.

The Study Team assesses this as neutral.

6.3.2. Command and Control Training and Education Center of Excellence (C2TECOE) Support to BCOC

6.3.2.1. Current Situation

The C2TECOE at Quantico provides four hours of training in support of BCOC. The Notes section of BCOC POI Lesson ID D20 states,

> Students receive a class over information exchange within a Combat Operations Center (COC). They will then move to C2TECOE center for demonstration of information exchange within a COC using C2TECOE Troops in Contact (TIC) and Fire Support request templates. Training time at C2TECOE must be scheduled immediately following each BCOC course calendar finalization.[55]

Additional information provided to the Study Team indicates that the TIC demo serves primarily to show the students how all the radio and C2 systems work together in a real-world Operations Center, and it gives validation and reinforcement to the students that the radio systems they plan, install, operate, and maintain in their unit truly do serve an important purpose. The C2TECOE has a scenario script they follow and have role players for COC Watch Chief, COC Clerk, Fires Clerk, Intel Clerk, etc. There is also someone who plays higher headquarters that they talk to. There is an automated script that moves the Position Location Information icons across the display real-time as they run through the scenario. They also have an Unmanned Aerial Vehicle video, which is used in the scenario. They use the actual radios and phones as they run through the scenario. It is a very realistic display that shows how a TIC is handled in a COC. All in

[54] Ibid., p. 1-7.
[55] M02LC52 Basic Communications Officer Course CDD dtd 28 Jan 2010, p. IV-257.

all, this scenario takes about 1 hr per group (4hrs total if four groups), and includes discussion before and after, as well as a brief familiarization tour of the COC by the C2TECOE personnel.

6.3.2.2. Potential Impact

Communications School personnel indicated that if this training could not occur, BCOC students would not benefit from a valuable training opportunity.

6.3.2.3. Assessment

During its site visit to 29 Palms, the Study Team met with MAGTF Integrated System Training Center (MISTC) personnel to determine whether the instruction could be supported. The MISTC personnel indicated that the content could be provided and that the time requirement could be accommodated. Therefore, there is no negative impact on BCOC instruction.

The Study Team assesses this as neutral.

6.4. Producing Equipment Savings

6.4.1. Current Situation

The Communications School and MCCES maintain separate requirements and have separate allowances for equipment. Although many of the items on their respective T/Es are identical, the quantities reflect the individual needs of their training curricula and schedules.

6.4.2. Potential Impact

MCCES personnel indicated that a combined organization would not require all of the equipment of both organizations because they expect efficiencies in the way equipment is used.

By examining officer and enlisted training schedules, a combined organization may be able to use equipment more efficiently. For example, if BCOC requires a particular item 10% of the academic year, that equipment currently sits idle 90% of the time. If MCCES requires the same item 60% of the academic year, then it may be possible, based on when the equipment is needed during each course that requires it, to use the MCCES equipment to meet both officer and enlisted training requirements.

Some of the benefits of a reduction in equipment requirements are:

- If the equipment has already been purchased, excess items could be redistributed to satisfy other Marine Corps requirements.
- If the equipment has not yet been purchased but the funds have been allocated, the funds could become available to purchase other required items.
- Reducing the overall Marine Corps T/E may reduce the cost of maintaining that T/E, although increased use may partially offset that savings.

6.4.3. Assessment

Equipment savings are possible, but only through an analysis of equipment requirements and coordination between officer and enlisted communications training schedules in order most efficiency use the minimum amount of equipment.

The Study Team assesses this as a potential positive for relocation.

6.5. Resolving Command Relationship Issues

6.5.1. Current Situation

In June 2008, the Communications School Director's billet was designated as a LtCol Command Billet in accordance with the Marine Corps Command Screening Program (although not a Commanding Officer).[56] The Communications School is still in the process of adjusting command arrangements. Formerly reporting directly to CG, TRNGCMD, the Communications School is now subordinate to MCCES.[57] However, previously existing support relationships are still in place, resulting in the potential for uncoordinated actions by MCCES and the Communications School.

Both MCCES and Communications School exercise (and maintain the structure required to support) command functions (e.g. correspondence, publications management, orders and directives, legal, promotion, performance reviews, career planning, mail).

Discussions with Communications School staff indicated that command relationships between the Communications School and MCCES, and between the School and external agencies aboard MCB Quantico continue to evolve towards a fully normalized relationship with MCCES as the senior command, and with MCB Quantico as the home station.

The primary source of funding for the Communications School is the Operations and Maintenance, Marine Corps (OMMC) budget administered through TRNGCMD/G-7. The Communications School maintains and executes its own budget per the unit SOP.[58]

Discussions with both staffs indicate that each goes directly to MARCORSYSCOM for issues related to equipment required for training. MCCES discussed consolidating all requirements for a single submission.

6.5.2. Potential Impact

Discussions with MCCES indicate that collocation, which includes incorporation of Communications School functions and personnel into appropriate portions of MCCES, would resolve the outstanding command relationship issues. Specifically,

- Command functions currently performed by the Communications School staff would shift to the MCCES staff, which is already performing the same functions through established procedures and relationships,
- The Communications School budget would be merged into the MCCES budget, reducing the administrative burden of maintaining two separate budgets, and
- Requests for equipment in support of training would be consolidated and coordinated within MCCES.

[56] Training Command Formal Learning Center FY 10 Survey, MCCES Consolidated Response, 30 Sep 2009, p. 4.
[57] Training Command Order (TRNGCMDO) 5402.1, Training Command Organizational Manual, paras. 1-4 and 2.5.
[58] Ibid., para 5007.

6.5.3. Assessment

Collocation and integration of the two schools will streamline command and support relationships, building upon existing structures within MCCES.

The Study Team assesses this as a potential positive for relocation.

6.6. Supporting the Marine Corps Communications Community

6.6.1. Current Situation

The TRNGCMD Organizational Manual states that the mission of MCCES is:

> to train Marines in communications-electronics maintenance, operational communications, air control and anti-air warfare operations, computer programming and networking and to participate in technical and logistical evaluations of new communications-electronics systems in the development of formal training.[59]

It further states that:

> the mission of Communications School is to provide professional and technical training in the planning, designing, engineering, employment and operation of tactical communications systems in order to ensure commanders at all levels within the Marine Corps have the ability to exercise the command and control functions throughout the operational environment.[60]

Both institutions manage their curricula in accordance with established procedures and conduct CCRBs and T&R reviews as required.[61] However, the CCRBs focus on individual classes. The T&R Review is a broader effort that brings in communications experts from across the Corps to review and update the T&R manual to reflect changes in technology and equipment, operational experience and evolving TTPs.

Both staffs indicated that they have extensive interactions with the operating forces and other elements of the Marine Corps communications community, responding to questions, providing technical advice, and receiving lessons learned through operational experience. Both staffs indicated that they valued this interaction, but further discussion revealed that some felt that having two schools interacting independently with the communications community could result in inconsistencies or conflicts in advice given.

6.6.2. Potential Impact

Consolidation of the two schools will focus all school technical expertise in a single location. This will enable CCRBs to be held in a single location and will, by virtue of that consolidation, give the Operating Forces (and all other agencies) a single source of information regarding communications TTPs.

[59] TRNGCMDO 5402.1, para. 2-5.
[60] Ibid.
[61] SAT Manual, op. cit.

6.6.3. Assessment

Consolidating the two schools would combine what are already recognized technical and procedural focal points into a single focal point to which external agencies could address questions or pass experiences. The communications community will benefit from a more consistent and coordinated source of information, as well as by having a single submission or question addressed to MCCES be routed to all appropriate course managers. A single POC agency for communications technical matters will enable economies of scale (a more coordinated approach and wider dissemination of issues within the MCCES staff), interaction of concurrent CCRBs at a single location, a single source of definitive technical information (and more consistent responses), and delivery of better trained communicators to the fleet because issues are addressed across the continuum of communications training and by the staff of a single agency.

The Study Team assesses this as a potential positive for relocation.

6.7. Managing 0601 Lieutenants Awaiting Training

Upon graduation from TBS, students designated 0601 (Basic Communications Officer) frequently must wait until the next BCOC convenes. There are seven TBS classes per year, but only two BCOCs. Although the number of students in this status varies, since each TBS class can have as many as 18 0601s (based on information provided by Communications School staff), and up to three classes may graduate before the next BCOC convenes, potentially up to 56 Lieutenants may be in Marine Awaiting Training (MAT) status for periods ranging from one to four months. This paragraph addresses the management of officers in a MAT status in accordance with the unit SOP.[62]

6.7.1. Current Situation

Currently MAT officers are assigned to the Communications School, which arranges for temporary assignments until the next BCOC start date.[63] These assignments vary with the assignment opportunities available and the duration of MAT status. The Communications School selects opportunities for MAT officers that (1) are related to the duties of a Communications Officer or relate to the BCOC course curriculum or (2) broaden the experience of a Marine officer. Examples of the latter include serving as a recorder on a selection board and performing tasks as a junior staff officer within an element of TECOM.

The MCNOSC provides the primary opportunity for MAT officers to perform duties of a Communications Officer. According to the MCNOSC Executive Officer, LtCol David DiEugenio, the MCNOSC has put together a program that exposes assigned 0601 Lieutenants to tasks similar to those they will encounter in the fleet. These include taskings to create and present briefings on specific communications topics (including updating and presenting the MCNOSC orientation brief), responding to specific questions or tasks, and performing small tasks that normally would pull MCNOSC staff away from their duties. The MCNOSC concept also includes exposing the 0601s to experienced 0602s as well as to OccFld 06 SNCOs and NCOs, so they can gain a better appreciation of communications operations in the operating forces. Mentoring by

[62] Comm School SOP, para. 5002.3.
[63] Ibid., para 5003.

the 0602s provides perspectives on operations in the fleet. MAT officers are also provided a structured environment within which they can complete any prerequisites for BCOC. In short, the MCNOSC has created a program that focuses upon communicating real-world experiences and gives participants the responsibility for completing tasks often required of a 0602 Lieutenant. In return, the MCNOSC is able to accomplish many tasks, which might otherwise be delegated to MCNOSC staff. A draft Memorandum of Agreement codifies the relationship.[64]

6.7.2. Potential Impact

If MCNOSC is no longer afforded the opportunity to have MAT officers assigned, LtCol DiEugenio indicated that MCNOSC would adapt and continue accomplishing its mission. He expressed concern that the experience provided at MCNOSC could be hard to duplicate at 29 Palms.

6.7.3. Assessment

MCCES has indicated that there are numerous functions that MAT officers could perform at 29 Palms, which are consistent with the criteria currently used by Communications School when assigning MAT officers aboard Quantico. Consequently, managing MAT 0601s does not present a problem if the Communications School moves to 29 Palms.

The Study Team assesses this as neutral.

6.8. Supporting Marine Corps Base Quantico Anti-Terrorism / Force Protection Plan

6.8.1. Current Situation

Communications School is tasked to provide support for the MCB Quantico Anti-Terrorism / Force Protection Plan. According to Annex K (Communications and Information Systems) to the plan:

> On a continuing basis, AC/S G-6, augmented by Enlisted Instructor Platoon, installs, operates, and maintains (IOM) reliable, responsive, secure, and flexible communications and information systems (CIS) in order to support the command and control requirements of this Plan.[65]

The plan goes on to specify four requirements:[66]

- On order, Commanding General TECOM will direct the Officer In Charge (OIC) of Enlisted Instructor Platoon to report to the Director, Communications Division, G-6. The Enlisted Instructor Platoon will remain under the operational control of Director, Communications Division, G-6 for the duration of the crisis. The OIC, Enlisted Instructor Platoon shall:

[64] Memorandum of Agreement Between Marine Corps Network Operations and Security Center and Communications School, Final Draft.
[65] MCB Quantico AT/FPP-09, para 2.
[66] Ibid., para. 3e(2).

- On order, IOM all necessary equipment required for the Director, Operations Division, G-3 to support the Joint Force Headquarters communications plan, as outlined in Appendix 2, Tactical Satellite (TACSAT) Radio Circuit Plan.
- Provide watch personnel for the Director, Operations Division, G-3 as required.
- Be prepared to establish communications in the command and control vehicle (C2V), as required by the Director, Operations Division, G-3.

Further, EIP is directed to install and operate a satellite radio (SATCOM AN/VRC-103 or AN/PRC-117) at Quantico's entry into the regional TACSAT network.[67]

6.8.2. Potential Impact

Relocation of the Communications School and its component EIP would remove the personnel and equipment assets required by AT/FPP-09.

6.8.3. Assessment

EIP is used as a source of communications equipment and personnel because it exists and is located in close proximity to the Base headquarters. If it did not exist, then G-6 would draw upon other capabilities of tenant units at Quantico. Combat Service Support Company, Instructor Battalion, TBS has a Communications Platoon with similar structure and equipment, and this organization is not tasked in Annex K of AT/FPP-09. If the Communications School relocated, this is the most likely source of necessary communications capability. Although tasking of the TBS Communications Platoon might interfere with ongoing training, it is unlikely that that conflict would be any more significant that the impact of EIP employment on ongoing training at the Communications School. AT/FPP-09 has not been exercised.

Given the availability of alternative communications capabilities aboard MCB Quantico, relocation of the Communications School would not have a critical impact on AT/FPP-09, which could be modified to task TBS to provide the required communications support.

The Study Team assesses this as neutral.

6.9. Relocating Civilian Personnel to 29 Palms

6.9.1. Current Situation

Discussions with MCCES personnel indicated concern regarding the willingness of civilian personnel to relocate to 29 Palms. Civilians provide subject matter expertise and institutional knowledge to Communications School operations. Eight of the 105 billets on the Communications School T/O are civilian billets.

6.9.2. Potential Impact

In a combined organization, as the two formerly separate entities determine the most effective way to perform as a single entity, the knowledge of the reasoning behind certain Communications School practices possessed by civilian personnel may help avoid relearning previously learned lessons with regard to communication officer training.

[67] Ibid, Appendix 2 (Radio Circuit Plan (TACSAT))

6.9.3. Assessment

MCCES indicated that the Communications School is a smaller version of MCCES and that institutional knowledge would likely not be lost. However, the Study Team considers that, immediately following relocation, Communications School civilian personnel would be valuable assets in providing continuity in officer training operations. Consideration of preserving civilian personnel institutional knowledge should precede a decision to relocate.

The Study Team assesses this as a potential short term negative for relocation.

6.10. Housing Military Families in the 29 Palms Area

6.10.1. Current Situation

According to the 29 Palms 2009 Housing Market Analysis (HMA), there is an overall shortage of military family housing in the 29 Palms area of 971 units in 2009 and a projected shortage of 814 units in 2014. The assumptions in the HMA include:

- Market area is based on a 60-minute drive at normal commuting times,
- Rental mobile homes are inadequate for military members,
- 2009 BAH and 2009 Community Rental Costs, and
- One bedroom per family member.

6.10.2. Potential Impact

All else being equal, moving the Communications School will generate additional demand on the housing supply. Based on the active duty billets retained, the shortage by grade is shown in Table 6-3.

Table 6-3. 29 Palms Military Family Shortage (Surplus) By Grade

Grade	Number	% Married	Expected Number	2009 Shortage (Surplus)	2014 Shortage (Surplus)
LTCOL	1	93.1%	0.93	2	3
MAJ	3	89.4%	2.68	4	(8)
CAPT	10	77.8%	7.78	(1)	(25)
2LT	75	32.6%	24.45	0	(15)
CWO4	2	89.0%	1.78	1	1
CWO3	1	89.0%	0.89	0	1
MSGT	1	88.6%	0.89	23	23
GYSGT	4	85.4%	3.42	42	35
SSGT	8	81.7%	6.54	102	23
SGT	15	72.6%	10.89	174	105
CPL	8	49.0%	3.92	235	208
LCPL	4	25.7%	1.03	369	405

The figures show sufficient family housing supply for Majors and Captains in 2014 and shortages for all other grades.

6.10.3. Assessment

While the HMA quantified the shortages and surpluses, it did not quantify how the existing active duty population is being housed currently. In order to house the existing population in the 29 Palms area, the Study Team could only assume that one or more of the HMA assumptions are being circumvented:

- Military members are driving more than 60 minutes to work,
- Families are renting mobile homes,
- Families are paying more than BAH in rent, or
- Families are exceeding the family member per bedroom assumption.

In any event, the housing situation at 29 Palms should receive additional attention.

The Study Team assesses this as a potential negative for relocation.

6.11. Summary

The Study Team identified 13 areas where moving the Communications School could have a non-quantifiable impact, summarized in the Table 6-4. Seven of the relocation impacts are potentially positive, four are neutral, and two are potentially negative.

Table 6-4. Non-Quantifiable Impact Summary

Non-Quantifiable Impact	Assessment
Aligning curriculum content	Positive
Sharing experiences within the instructor cadre	Positive
Developing capstone exercises	Positive
Reinforcing the relationship between communications officers and SNCOs	Positive
Providing SATCOM Support to FEXs	Neutral
C2 TECOE Support to BCOC	Neutral
Producing equipment savings	Positive
Resolving command relationship issues	Positive
Supporting the Marine Corps communications community	Positive
Managing 0601 Lieutenants awaiting training	Neutral
Supporting MCB Quantico Anti-Terrorism / Force Protection Plan	Neutral
Relocating civilian personnel to 29 Palms	Negative
Housing military families in the 29 Palms area	Negative

7. OBSERVATIONS AND RECOMMENDATIONS

7.1. Introduction

This chapter summarizes observations and provides a recommendation regarding the potential relocation of the Communications School to 29 Palms.

7.2. MILCON and Relocation Costs

The primary component of the Communications School facilities requirements is space for classrooms and instructional labs. MCCES cannot accommodate the Communications School's classroom and lab requirements without displacing existing training. Providing adequate facilities for officer training requirements will require an estimated investment of approximately $10.4M in MILCON at 29 Palms.

While the Communication School is fulfilling its mission at Quantico, multiple MILCON requests to replace existing Communications School facilities at Quantico have been made. Excerpts from two submissions provided to the Study Team are shown in Figure 7-1 and Figure 7-2[68]. The first submission implies that current Communications School facilities are inadequate. The second clearly states that they are inadequate.

1. Component MARINE CORPS	FY 2013 MILITARY CONSTRUCTION PROGRAM		2. Date 30 SEP 2005
3. Installation and Location/UIC: M00264 MARINE CORPS BASE QUANTICO QUANTICO, VIRGINIA		4. Project Title Command and Control System School, MCU	
5. Program Element	6. Category Code 17120	7. Project Number P509	8. Project Cost ($000) 7,760

This project constructs an applied instruction and administrative facility. The instruction space includes classrooms and modified lecture classrooms. All classrooms will be wired for network usage and multimedia capability. Academic support spaces include Instructor administrative offices, conference room, lounge spaces, locker rooms, film video rooms, and storage areas.
(Current Mission)

REQUIREMENT:
TO providee an adequate training facility for the Command and Control System School.

CURRENT SITUATION:
CCSS currently occupies a 1947 electrical shop that has not had significant renovations since 1989.

IMPACT IF NOT PROVIDED:
Training will be adversely affected.

Figure 7-1. Excerpt from 2005 Communications School MILCON Request

These submissions are reinforced by Communication School's responses to a FY10 Survey of Formal Learning Centers conducted by TRNGCMD, from which the following quotes are drawn:

- "Extensive roof leakage in Bldg 2085 (Edson Hall); requires repair or replacement",

[68] The Communications School was formerly called the Command and Control System School. It was officially renamed on 23 December 2004.

- "HVAC System does not adequately cool Bldg 2085", and
- "We routinely reserve space in Gray Research Center to provide a comfortable environment for classroom training when the HVAC system in Bldg 2085 is unable to effectively cool the building."

1. Component MARINE CORPS	FY 2010 MILITARY CONSTRUCTION PROGRAM		2. Date 13 SEP 2007
3. Installation(SA) and Location/UIC: M00264 MARINE CORPS BASE QUANTICO QUANTICO, VIRGINIA		4. Project Title Command and Control System School, MCU	
5. Program Element 0805796M	6. Category Code 17120	7. Project Number P509	8. Project Cost ($000) 17,810

CURRENT SITUATION:

CCSS currently occupies a 1947 electrical shop that has not had significant renovations since 1989. The existing facilities are inadequate for the current through-put of students.

IMPACT IF NOT PROVIDED:

The Communication School will operate in inadequate, undersized facilities. This will negatively impact their ability to complete their mission.

ADDITIONAL: Economic Alternatives Considered:

A. Status Quo:

This is not a viable option. Current facilities are too small, poorly configured, and contain numerous deficiencies in the existing mechanical and environmental systems. Life cycle costs were not considered for this alternative, since it is a non-feasible alternative.

B. Renovation/Modernization:

This is not a viable option. The cost of modernization and the addition is greater than the new construction option.

C. Lease:

This is not a viable option. There are no assets available for leasing in the local community that would meet the facility and anti-terrorism/force protection requirements for academic facilities.

D. New Construction:

This is the preferred option. This option constructs a new facility and is the only alternative that will meet the Communications School academic and administrative requirements.

E. Other Alternatives:

None

F. Analysis Results:

The New Construction alternative is the least cost to the government and provides the most benefits.

Figure 7-2. Excerpt from 2007 Communications School MILCON Request

While no MILCON funding for replacement facilities has been approved, the requirement for a new facility exists. Note that the 2007 MILCON request indicates a project cost of $17.81M.

To the extent that the Marine Corps University (MCU) Strategic Plan 2011-2016 reflects the overall Marine Corps plan, MCU does not envision the primary Communications School building (Edson Hall) on its campus, as shown in Figure 7-3.

While the Study Team could not identify any directives that compel the Communications School to seek new accommodations based on the MCU plans, the 2007 MILCON request indicates that renovation is not a viable option and that significant resources will be required to replace it in the future. If the Marine Corps decides to expend the resources, the question is, "Where should the new building be located?"

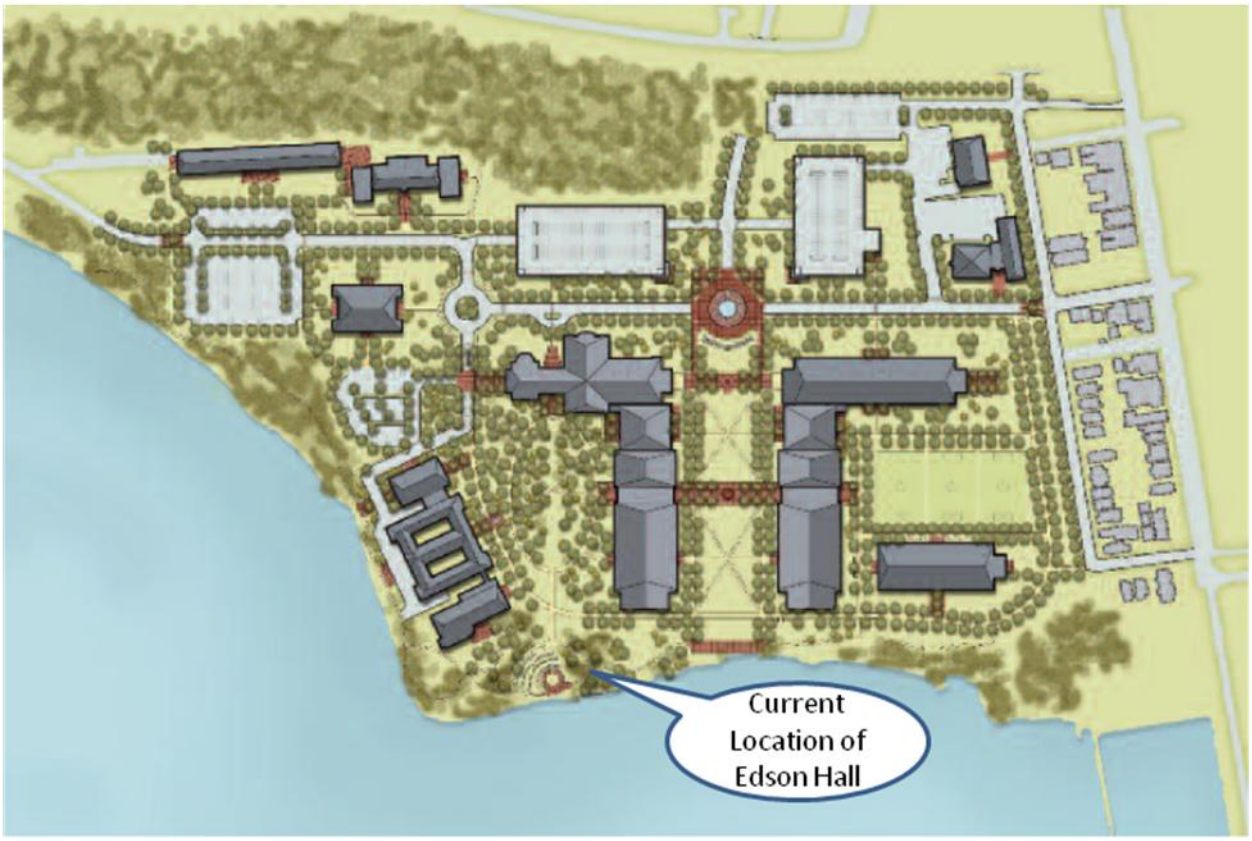

Figure 7-3. MCU Strategic Facilities Plan[69]

As described in 5.3, the cost of relocating personnel and equipment is approximately $800K.

7.2.1. Operations and Support

Should the Communications School relocate, the annual cost associated with providing officer training will be reduced by $306K. The total annual O&S costs to the Marine Corps will increase by $225K. $168K of the increase is due to continuing to operate the facilities at Quantico that would be vacated by a Communications School move to 29 Palms. Continuing to operate the Communications School facilities, however, should be considered as a separate decision.

If the cost of operating existing facilities at Quantico is not included, total O&S costs to the Marine Corps will increase by $57K. This is due to the fact that Marines serving in billets no longer required to support officer training must still be paid BAH at the locations(s) to which those billets are reallocated.

[69] Marine Corps University (MCU) Strategic Plan 2011-2016, dtd. September 2010, p. 10.

7.3. Benefits

A tangible benefit of combining the schools is that it may potentially result in making 43 billets available for application to other Marine Corps needs.

There will also be substantial, albeit intangible, benefits if the schools are consolidated:

- Facilitating common training – Benefits in this area include better alignment of curriculum content, instruction based on the combined experiences of collocated instructors, the potential for creating a capstone exercise that reflects what a team of communicators (officer and enlisted) will encounter in an operational environment, and reinforcing the relationship between officers and SNCOs.
- Producing equipment savings – A single organization is likely to require less equipment than the combined equipment of two separate organizations. Collocation would allow the potential reduction of training equipment requirements through more efficient use of equipment across classes.
- Enhancing support to the Marine Corps communications community – Collocation would provide a single focal point for communications expertise, rather than the two that exist currently.

Consolidation of the two schools is necessary if any of these benefits are to be realized.

7.4. Recommendation

Based on the minimal costs and the tangible and intangible benefits that will accrue, it appears to be beneficial to the Marine Corps to continue pursuing the relocation of the Communications School to 29 Palms and prepare for its integration with MCCES.

Appendix A Acronyms

AB ..... Annotated Bibliography
ACOC ..... Advanced Communications Officer Course
BAH ..... Basic Allowance for Housing
BAS ..... Basic Allowance for Subsistence
BCOC ..... Basic Communications Officer Course
BEQ ..... Bachelor Enlisted Quarters
BFR ..... Basic Facility Requirements
BOQ ..... Bachelor Officer Quarters
BRAC ..... Base Realignment and Closure
C2 ..... Command and Control
C2TECOE ..... Command and Control Training and Education Center of Excellence
CERAM ..... Cost Estimation and Resource Allocation Model
CBA ..... Cost Benefit Analysis
CCN ..... Category Code Number
CCNA ..... Cisco Certified Network Associate
CCRB ..... Course Content Review Board
CDD ..... Course Descriptive Data
CLB-7 ..... Combat Logistics Battalion 7
COA ..... Course of Action
COC ..... Combat Operations Center
COOP ..... Continuity of Operations Plan
DITS ..... Deployable Integrated Technical Systems
DoD ..... Department of Defense
DSTC ..... Data Systems Technician Course
EIP ..... Enlisted Instructor Platoon
FEX ..... Field Exercise
FF&E ..... Furnishing, Fixtures and Equipment
FROC ..... Field Radio Operator Course
GC ..... Ground Communications
GFI ..... Government Furnished Information
HMA ..... Housing Market Analysis
M&IE ..... Meals and Incidental Expenses
MAGTF ..... Marine Air Ground Task Force
MAL ..... Mechanized Allowance List
MARCORSYSCOM ..... Marine Corps Systems Command
MAT ..... Marine Awaiting Training
MCAGCC ..... Marine Corps Air Ground Combat Center
MCB ..... Marine Corps Base
MCCDC ..... Marine Corps Combat Development Command
MCCES ..... Marine Corps Communication-Electronics School
MCCLL ..... Marine Corps Center for Lessons Learned

MCDP ..... Marine Corps Doctrinal Publication
MCNOSC ..... Marine Corps Network Operations and Security Center
MCO ..... Marine Corps Order
MCTIMS ..... Marine Corps Training Information Management System
MCWP ..... Marine Corps Warfighting Publication
MET ..... Mission Essential Task
MILCON ..... Military Construction
MISTC ..... MAGTF Integrated System Training Center
MOE ..... Measure of Effectiveness
MOS ..... Military Occupational Specialty
MT-Eng ..... Motor Transport / Engineer
MWCS ..... Marine Wing Communications Squadron
NCO ..... Non-Commissioned Officer
NSF ..... Net Square Feet
O&S ..... Operating and Support
OccFld ..... Occupational Field
OIC ..... Officer In Charge
PCS ..... Permanent Change of Station
POC ..... Points of Contact
POI ..... Program of Instruction
POP ..... Period of Performance
POV ..... Privately Owned Vehicle
PPV ..... Public Private Venture
RIF ..... Rapid Issue Facility
SAT ..... Systems Approach to Training
SATCOM ..... Satellite Communications
SME ..... Subject Matter Expert
SNCO ..... Staff Non-Commissioned Officer
SOW ..... Statement of Work
STF ..... Switch Training Facility
T&R ..... Training and Readiness
TACSAT ..... Tactical Satellite
TAD ..... Temporary Additional Duty
TAMCN ..... Table of Authorized Material Control Number
TBS ..... The Basic School
T/E ..... Table of Equipment
T/O ..... Table of Organization
TECOE ..... Training and Education Center of Excellence
TECOM ..... Training and Education Command
TFSMS ..... Total Force Structure Management System
TFSP ..... Total Force Structure Process
TIC ..... Troops in Contact

TIP..... Training Input Plan
TRNGCOM.....Training Command
TSIMC .....Telephone Systems Installer Maintainer Course
TSM..... Transition Switch Module
TTP ..... Tactics, Techniques, and Procedures
UFC.....Unified Facilities Criteria
VAMOSC..... Visibility and Management of Operating and Support Costs
WOCC.....Warrant Officer Communications Course

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Appendix C Study Team Visit to MCCES Trip Report

Place: MCCES, 29 Palms, CA

Dates: Tuesday, 7 December 2010 through Thursday, 9 December 2010

Participants:

MGySgt Norman Agustin, MCCES Supply/Fiscal

CWO4 Ian Anthony, MAGTFTC G-1, IPAC

Mr. Mitch Arnzen, MISTC 29 Palms

Capt Paul Barron, Operations Officer, B Co

Mr. John Bowen, MAGTFTC G-6

Mr. Benjamin Breaux, Northrop Grumman

Ms. Brittlea Brown, Northrop Grumman

Mr. John Chalecky, Northrop Grumman

Maj Criston Cox, Commanding Officer, B Co

Mr. Dominic Cuyno, MCCES Training & Education Continuum Office

Mr. Craig Dearth, MCCES Director of Logistics

Mr. Tony Gilbert, MCCES Asst. Supply Officer/Fiscal Officer

GySgt Timothy Gilbert, MCCES GCMS Shop Chief

Mr. Bernard Grimes, MCCES Maintenance Officer

Mr. Kenneth Holbrook, MCCES Academics Officer

LtCol Eric Johnson, MCCES Operations Officer

Maj Frank Shelton, MAGTFTC G3

Mr. Paul Stokes, MCCES Deputy Director for Operations

Mr. Donald Tolbert, MCCES Systems Integration Officer

Capt William Tyree, MCCES Supply Officer

Purpose:

The purpose of the site visit was to solicit data, information and perspectives from the organizations within MCCES and aboard 29 Palms regarding the capability of supporting Communications School personnel/equipment, operating costs, how the Communications School organization may be combined/integrated into the current MCCES structure, and pros and cons of relocating the Communications School from Quantico to 29 Palms.

Initial discussion on the pros and cons of a move with Mr. Paul Stokes, Mr. Craig Dearth, and Mr. Dominic Cuyno (7 December 2010)

The Study Team began the meeting by soliciting thoughts on why moving the Communications School to 29 Palms is a “good idea.” Mr. Stokes explained that

combining the Communications School with MCCES would result in a consolidation in all communications training. He said that, currently, both the Communications School and MCCES request equipment from MARCORSYSCOM independently, creating the situation where MARCORSYSCOM has to choose between them to determine to whom to send a new item of equipment. If the schools are combined, there will be one common voice for equipment, and there would also be a more efficient allocation of communication assets if all equipment was physically located in one place.

Mr. Stokes stated that having a single voice for communications training also would allow for more effective shaping of training. As an example, there are parallels between Communications School Programs of Instruction and the MCCES Communications Chief Course. As Communications Chiefs may assume some Communications Officer responsibilities in the field, it would be beneficial for the Communications Chief to have the officer's perspective of the planning function.

Mr. Stokes also explained the need for a consolidated budget. He stated that although the Communications School is in the organizational structure of MCCES, the mechanics have not been put in place through official documentation for combined activities.

In discussing MAT, Mr. Stokes indicated that officers slated to attend MOS training in C Co PCS to their ultimate squadron assignments after The Basic School and then travel TAD to MCCES when their courses are scheduled to start. Therefore, MAT may not be an issue. During the visit, the Study Team learned from M&RA, via the Communications School, that, should the Communications School move to 29 Palms, due to the length of BCOC, officers slated to become Communications Officers would PCS from The Basic School to 29 Palms to attend BCOC and then PCS again to their fleet assignments.

Mr. Stokes mentioned that the long term plans of Marine Corps University (MCU) do not include the Communications School building, a fact confirmed by an artist's concept of the future layout of the MCU shown to the Study Team by a MCU representative during the Communications School site visit in September 2010.

Mr. Cuyno indicated that family housing in the vicinity of 29 Palms may be an issue. (A FY09 Housing Market Analysis provided by the 29 Palms Family Housing Office does, indeed, show a shortage of adequate family housing through FY14. The analysis provided does not go beyond FY14.)

Mr. Stokes said that MCCES can support Communications School's computer equipment. He added that the school maintains the software.

Academics discussion with Mr. Kenneth Holbrook (7 December 2010)

Mr. Holbrook noted that the Communications School has many fewer courses than MCCES to manage. He explained that Communications School curriculum development is done in instructor groups and then sent to the Formal Schools Manager for review before a final review by Mr. Holbrook. Mr. Holbrook added that if the Communications School were combined with MCCES, the process for curriculum approval would be the same as the process for those currently at MCCES.

In discussion of which billets would be required in a combined organization, Mr. Holbrook said that the Communications School Training Specialist (1712 GS12) billet

should be retained in the MCCES Academics Branch while the MCCES Assistant Academics Officer (2802 O3) billet could be eliminated.

Mr. Stokes said that the Enlisted Instructor Platoon would become part of B Co if the Communications School were combined with MCCES. He added that the B Company portion of the school does not currently have a deputy director.

Discussion with Mr. Donald Tolbert, MCCES Systems Integration Officer (7 December)

In a discussion of the responsibilities of the MCCES Systems Integration Office and those of the Communications School's Management Analyst (0343 GS12) billet, Mr. Tolbert said that MCCES would be able to absorb the workload of the Communications School billet with its existing structure. He explained that the Communications School currently submits its own TOECRs and responsibilities of the Communications School as part of MCCES would need to be clarified.

Maj Criston Cox, B Co CO and Capt Paul Barron, B Co OpsO (7 December)

Maj Cox stated that an advantage of having the Communications School at Quantico is that it allows students to stay in the same place for 1.5 years. He added, though, that officers destined for other MOS do have to move for their training.

Maj Cox said bringing the Communications School to 29 Palms would provide benefits in terms of structure savings. He stated that the EIP MOS could be absorbed by the MCCES structure, but would not have to be as large as it is currently. He said that MCCES could provide 90-100 instructors and that augmentation may be needed from the EIP. Maj Cox indicated that retaining 20-25 of the EIP billets should be sufficient.

Most MCCES instructors are SNCOs. Capt Barron indicated that using SNCOs to train officers rather than Corporals and Lance Corporals would get the officers accustomed to interacting with SNCOs, i.e., the people they will need to rely on in the fleet.

With regard to the MT/Eng section of the EIP, both Capt Barron and Mr. Stokes agreed that B Co was the appropriate location in the MCCES organization for the activity. Capt Barron indicated that B Co has room for Communications School's vehicles.

In a discussion of a combined organization, Capt Barron concurred with the following possibilities:

- The B Co Commanding Officer (0602 O4) billet is replaced with a 0602 O5.
- The B Co Executive Officer (0602 O3) billet is replaced with a 0602 O4
- The existing B Co Executive Officer (0602 O3) billet is eliminated
- The B Co Operations Officer (0602 O3) billet is replaced with a 0602 O4

Capt Barron indicated that the Communications School Deputy Director (1712 GS14) billet could be added to B Co to provide continuity in B Co operations. Mr. Stokes noted that this is consistent with a similar civilian billet in A Co.

The Study Team asked about opportunities for MAT officers. Capt Barron replied that opportunities for MAT officers were limited within B Co.

Discussion Mr. Dearth, Mr. Bernard Grimes, GySgt Timothy Gilbert, Logistics and Maintenance (December 7)

The Study Team asked if the Government vehicles in use by MCCES currently would be sufficient to support the addition of Communications School's requirements.

Mr. Dearth replied that MCCES has sufficient transportation assets.

The Study Team inquired about space for the EIP maintenance personnel in MCCES maintenance spaces and maintenance support for the Communications School TE equipment. Mr. Grimes responded that the MCCES Maintenance Branch could accommodate the additional personnel in its spaces. While most of Communications School's equipment could be maintained by the MCCES Maintenance branch, there are several items in the Communications School TE for which the maintenance concept is required.

The Study Team asked which of the EIP maintenance billets would be required if the two maintenance organizations were combined. GySgt Gilbert responded that, due to the number of data and C2 systems on the Communications School TE, the MOS 2844 and 2847 billets should be retained. Mr. Grimes added that the 2846 billets are probably not needed as MCCES has a sufficient quantity. He also indicated that the Communications School Maintenance Supervisor (2862 E7) billet would not be necessary.

Discussion with LtCol Eric Johnson, MCCES Operations Officer (December 8)

The Study Team asked for items that need to be considered for a Communications School move decision. LtCol Johnson listed the following benefits if the two schools were combined:

- Alignment of curriculum: where the Communications School and MCCES teach similar content, the content could be coordinated and made consistent.
- Personnel savings: the combined organization would not require all of the structure of both organizations.
- Equipment savings: the combined organization would not require all of the equipment of both organizations.
- Foster communications: experiences of both Communications School instructors and MCCES instructors are more likely to be shared and a consistent experience base used in instruction.
- Command relationship issues would be resolved: currently, not all staff relationships between Communications School and support organizations aboard Quantico have been updated to reflect that Training Command has designated Communications School as a major subordinate command of MCCES.
- Opportunities for developing a combined exercise involving officers, SNCOs and entry level students, where none exist now.
- Communications expertise would exist in a single place for CCRBs.
- "It just makes sense."

LtCol Johnson indicated that a potential drawback to moving might be unwillingness of civilian personnel to move from Quantico to 29 Palms, which may affect the continuity of the Communications School operations. He added, however, that institutional knowledge would likely not be lost, since Communications School is a small version of MCCES.

In a discussion of opportunities for MAT officers, LtCol Johnson identified several potential uses for MAT officers:

- Troop handlers,
- Orders refinement (data entry),
- Maintaining MCCES SOP,
- In-house studies,
- Support to Mojave Viper (role playing),
- Marine Corps Martial Arts Program (MCMAP) classes with opportunities to become MCMAP instructors,
- Maintaining the MCCES SharePoint portal,
- Performing some of the clerical functions of unfilled MCCES billets, and
- Monitoring PFTs and CFTs.

He added that this list was generated on the spur of the moment. Given more time, more options could be identified. Mr. Stokes added that HQ Co would be able to provide sufficient opportunities for MAT officers.

Discussion with Mr. John Bowen, MAGTFTC G-6 (December 8)

Mr. Bowen indicated that the initial cost of providing communication infrastructure is based on the size and type of facility and that the G-6 uses a tool for cost estimation. The Study Team provided the approximate space requirement as well as the number of telephone and data drops required by the Communications School. Mr. Bowen had the data entered in the estimation tool and provided the Study Team with the resulting estimate: $508K.

Discussion with Maj Frank Shelton, MAGTFTC G3 (December 8)

Maj Shelton indicated that requirements for training range time need to be properly coordinated with the G-3. He provided information on the process of securing range time. No data regarding actual range availability were made available to the Study Team.

Discussions with representatives of MAGTFTC G-4 and G-8 (December 8)

The Study Team met with representatives of MAGTFTC G-4 and G-8 to introduce the purpose of the study and establish Points of Contact for any possible future inquiries.

Discussion with Mr. Mitch Arnzen, MISTC 29 Palms (December 9)

The Study Team provided Mr. Arnzen with the description (an email sent to the Study Team by Mr. Jim Hilton, Communications School) of the training that BCOC students receive from the C2 TECOE at Quantico and asked if the MISTC 29 Palms could

provide the same instruction. Mr. Arnzen replied that the MISTC could satisfy the lesson content requirement. He added that the MISTC priority is to train deploying Marines, but that the MISTC could accommodate the one day necessary for conducting the training.

Discussion of SATCOM Support with Mr. Stokes (December 9)

In response to a concern raised during the Study Team's visit to the Communications School in September 2010, the Study Team inquired about the availability of SATCOM support to BCOC FEX 3, currently provided by 6th Comm Bn.

Mr. Stokes said the 9th Comm Bn, located aboard Camp Pendleton, can support field exercises when it is not deployed. MWCS-38, at Miramar, also has SATCOM assets that might be made available to support Communications School requirements. In addition, MCCES can mitigate any non-availability using SWAN or by simulating links.

Discussion with CWO4 Ian Anthony, MAGTFTC G-1 (December 9)

CWO4 Anthony requested the annual throughput of the Communications School. Mr. Chalecky responded that the maximum throughput was 310 students. CWO4 Anthony indicated that the workload represented by the additional records should not have a dramatic impact in the 29 Palms IPAC. He added there is a general ratio of 1 clerk per 85 Marines used for planning purposes, so 3 or 4 more clerks could be justified. He also said that if the Communications School were to move to 29 Palms, he expected that the necessary clerk billets would gradually transition from the Quantico IPAC to the 29 Palms IPAC.

Billet Discussions with Mr. Stokes (December 9)

The Study Team reviewed the Communications School TO with Mr. Stokes to gather his feedback on the Communications School billets not yet discussed during the site visit. Mr. Stokes provided the following feedback:

- Office of the Director Secretary (0318 GS7) – MCCES has a command secretary billet and a second billet would not be required.
- Communications School Operations Section Ops Chief (0699 E9), Course Coordination Chief (0629 E6), and Field Radio Operator (0621 E3) (serves as training NCO) – MCCES has billets to perform these functions and would not require additional billets to handle the additional workload.
- Communications School Administrative Section Admin Chief (0193 E6) and Office Support Clerk (0318 GS4) – Due to the increase in administrative load created by the addition of Communications School personnel and students, these billets should be retained and added to the MCCES Command Adjutant Section.

Discussion with Capt William Tyree, MGySgt Norman Agustin, and Mr. Tony Gilbert, MCCES Supply and Fiscal (December 9)

Discussions centered on the ability of MCCES to support storing and issuing the individual equipment on the Communications School TE, and the billets required if the Communications School Fiscal/Supply section were combined with the MCCES Supply Branch.

Capt Tyree stated that MCCES could absorb all of the gear and issue it out. He also said that the three supply clerks in the Communications School Supply/Fiscal section would not be required: the NCO Supply Clerk (3043 E4) billet should be retained for leadership and experience.

In the MCCES Fiscal Unit, Mr. Gilbert said that MCCES has a budget analyst and that the Communications School Budget Analyst (0503 GS9) billet would not be required. Also, the Communications School Financial Management Resource Chief (3451 E5) billet would not be required by MCCES. After reviewing the Communications School budget, Mr. Gilbert indicated that one of the remaining Supply Clerk (3043 E3) billets in the Communications School Supply/Fiscal section should be added to B Co to assist with the increase in B Co's budget.

Mr. Breaux asked about the printing costs. Mr. Dearth said he would get an estimate for those (provided 9 December 2010). Mr. Breaux also requested a copy of the MCCES budget (provided 13 December 2010).

Appendix D EIP Activities

Table D-1 contains a detailed listing of EIP activities from 2 August 2010 through 3 December 2010, as provided by the Communications School.

Table D-1. Detailed EIP Activities List

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
2-Aug	0630-0800	1.5	Platoon	PT	Leadership	70
2-Aug	0800-1100	3.0	Wire	SL-3 Deos	Plt Ops	14
2-Aug	0800-1130	3.5	Platoon	Vehicle PM	Plt Ops	70
2-Aug	0800-1130	3.5	Data	BCOC Server Lab builds/Laptop Image	Prep/ Recovery	6
2-Aug	0800-1130	3.5	Maint	DPR / Mods / Warranty verification	Plt Ops	12
2-Aug	0800-1600	8.0	Platoon	Monthly Counseling Completed	Leadership	70
2-Aug	0800-1600	8.0	Radio	BCOC D11: (SINCGARS)	Student Contact	15
2-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
2-Aug	1300-1500	2.0	Wire	SL-3 TSM	Plt Ops	14
2-Aug	1300-1500	2.0	Data	BCOC Server Lab builds/Laptop Image	Prep/ Recovery	6
2-Aug	1300-1600	3.0	Maint	DPR / Mods / Warranty verification	Plt Ops	12
2-Aug	1700-1730	0.5	Platoon	Formation	Leadership	70
3-Aug	0600-0800	2.0	Platoon	PT	Leadership	70
3-Aug	0800-1600	8.0	Radio	BCOC D12 & S13	Student Contact	15
3-Aug	0900-1100	2.0	Bn	Rifle Range Brief	Leadership	Varies
3-Aug	0900-1100	2.0	Platoon	Healthy Relationship Workshop	Leadership	70
3-Aug	1000-1130	1.5	Radio	FEX 1 Meeting	Prep/ Recovery	15
3-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
3-Aug	1300-1630	3.5	Platoon	Monthly Serialized Inventory	Plt Ops	70
3-Aug	1830-2030	2.0	Softball Team	Softball Game	Recreation	15
4-Aug	0600-0800	2.0	Platoon	CFT Training	Leadership	70
4-Aug	0700-0800	1.0	Platoon	PME PFT	Leadership	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
4-Aug	0800-1130	3.5	Maint	DPR / Mods / Warranty verification	Plt Ops	12
4-Aug	0800-1130	3.5	Data	DDSR Server Active Directory Build	Prep/ Recovery	6
4-Aug	0800-1400	6.0	Bn	Pistol Range	Leadership	Varies
4-Aug	0800-1400	6.0	Radio	BCOC D14;D15	Student Contact	15
4-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
4-Aug	1300-1530	2.5	Data	BCOC Server Lab builds	Prep/ Recovery	6
4-Aug	1300-1530	2.5	Wire	Call Manager Class	Plt Ops	14
4-Aug	1300-1630	3.5	Maint	DPR / Mods / Warranty verification	Plt Ops	12
4-Aug	1700-1730	0.5	Formation		Leadership	70
5-Aug	0600-1000	4.0	Platoon	PT-Endurance Course at TBS	Leadership	70
5-Aug	0800-1300	5.0	Radio	BCOC Support	Prep/ Recovery	15
5-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
5-Aug	1300-1430	1.5	Wire	VX Training	Plt Ops	14
5-Aug	1300-1530	2.5	Data	DDSR Server Active Directory Build	Prep/ Recovery	6
5-Aug	1300-1530	2.5	Wire	Call Manager Class	Plt Ops	14
5-Aug	1300-1630	3.5	Maint	DPR / Mods / Warranty verification	Plt Ops	12
5-Aug	1430-1730	3.0	Platoon	Field Day	Leadership	70
5-Aug	1730-1930	2.0	Softball Team	Softball Game	Recreation	15
5-Aug	1930-2130	2.0	Softball Team	Softball Game	Recreation	15
5-Aug	1930-2130	2.0	Comm Scol	Spouses Day	Leadership	Varies
6-Aug	0600-0800	2.0	Platoon	PT	Leadership	70
6-Aug	0800-0900	1.0	Platoon	Counseling Class	Leadership	70
6-Aug	1000-1100	1.0	Platoon	Equal Opportunity Awareness	Leadership	70
6-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
6-Aug	1300-1400	1.0	Platoon	Social Networking	Leadership	70
9-Aug	0630-0800	1.5	Platoon	PT	Leadership	70
9-Aug	0800-1100	3.0	Platoon	Vehicle PM	Plt Ops	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
9-Aug	0800-1100	3.0	Wire	SL-3 Deos	Plt Ops	14
9-Aug	0800-1130	3.5	Data	EIP Domain Build	Prep/ Recovery	6
9-Aug	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
9-Aug	0800-1600	8.0	Platoon	Monthly Counseling Completed	Leadership	70
9-Aug	0800-1600	8.0	Radio	BCOC D18 & D21	Student Contact	15
9-Aug	0845-1130	2.8	Section	Update Record Jackets/DEOS	Plt Ops	Varies
9-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
9-Aug	1300-1500	2.0	Section	Update Record Jackets/RSAMS	Plt Ops	Varies
9-Aug	1300-1500	2.0	Wire	SL-3 TSM	Plt Ops	14
9-Aug	1300-1600	3.0	Data	EIP Domain Build	Prep/ Recovery	6
9-Aug	1300-1600	3.0	Maint	Equipment Repair Order Class	Plt Ops	12
9-Aug	1530-1600	0.5	Section	Update Record Jackets/RSAMS	Plt Ops	Varies
9-Aug	1700-1730	0.5	Platoon	Formation	Leadership	70
10-Aug	0600-0800	2.0	Section	PT	Leadership	Varies
10-Aug	0800-1000	2.0	Section	Update Record Jackets/RSAM	Plt Ops	Varies
10-Aug	0800-1130	3.5	Data	EIP Domain Build	Prep/ Recovery	6
10-Aug	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
10-Aug	0800-1300	5.0	Radio	BCOC D22	Student Contact	15
10-Aug	0900-1100	2.0	Bn	Rifle Range Brief	Leadership	Varies
10-Aug	1000-1130	1.5	Radio	FEX 1 Meeting	Prep/ Recovery	15
10-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
10-Aug	1300-1430	1.5	Section	Update Record Jackets/DITS	Plt Ops	Varies
10-Aug	1300-1600	3.0	Data	EIP Domain Build	Prep/ Recovery	6
10-Aug	1300-1630	3.5	Maint	Electrostatic Discharge Equipment Protection	Plt Ops	12

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
10-Aug	1530-1600	0.5	Section	Update Record Jackets/DITS	Plt Ops	Varies
11-Aug	0800-1400	6.0	Platoon	Family Day	Leadership	70
12-Aug	0600-0800	2.0	Platoon	PT	Leadership	70
12-Aug	0800-1100	3.0	Section	Updating Record Jackets/STE's	Plt Ops	Varies
12-Aug	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
12-Aug	0800-1130	3.5	Data	SL3 DDSR	Plt Ops	6
12-Aug	0800-1600	8.0	Radio	STRAPEX	Prep/ Recovery	15
12-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
12-Aug	1300-1430	1.5	Wire	VX Training	Plt Ops	14
12-Aug	1300-1530	2.5	Wire	Call Manager Class	Plt Ops	14
12-Aug	1300-1600	3.0	Data	SL3 DDSR	Plt Ops	6
12-Aug	1300-1600	3.0	Platoon	Updating Record Jackets/1042-838	Plt Ops	70
12-Aug	1300-1630	3.5	Maint	Testing Ground Electronics Equipment Class	Plt Ops	12
12-Aug	1430-1730	3.0	Platoon	Field Day	Leadership	70
13-Aug	0600-0800	2.0	Platoon	PT	Leadership	70
13-Aug	0800-0900	1.0	Platoon	Counseling Class	Leadership	70
13-Aug	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
13-Aug	0800-1130	3.5	Section	Updating Record Jackets/GS-54-J1077	Plt Ops	Varies
13-Aug	0800-1130	3.5	Data	Mentorship	Leadership	6
13-Aug	0800-1600	8.0	Radio	STRAPEX	Prep/ Recovery	15
13-Aug	1000-1100	1.0	Platoon	Equal Opportunity Awareness	Leadership	70
13-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
13-Aug	1300-1530	2.5	Section	Updating Record Jackets/312-PP8436	Plt Ops	Varies
13-Aug	1300-1600	3.0	Data	Mentorship	Leadership	6
13-Aug	1300-1630	3.5	Maint	PMCS On Power Supplies / Maintain Sensitive Area	Plt Ops	12
13-Aug	1630-1730	1.0	Platoon	Op checking fiber cables	Plt Ops	70
16-Aug	0600-0800	2.0	Platoon	PT	Leadership	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
16-Aug	0800-1100	3.0	Wire	SL-3 Deos	Prep/ Recovery	14
16-Aug	0800-1130	3.5	Platoon	Vehicle PM	Plt Ops	70
16-Aug	0800-1130	3.5	Wire	Staging Gears for FEX I	Prep/ Recovery	14
16-Aug	0800-1130	3.5	Data	UOC setup	Prep/ Recovery	6
16-Aug	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
16-Aug	0800-1600	8.0	Platoon	Monthly Counseling Completed	Leadership	70
16-Aug	0800-1600	8.0	Radio	FEX 1 PREP	Prep/ Recovery	15
16-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
16-Aug	1300-1500	2.0	Wire	SL-3 TSM	Plt Ops	14
16-Aug	1300-1600	3.0	Data	UOC setup	Prep/ Recovery	6
16-Aug	1300-1600	3.0	Maint	Equipment Repair Order Class	Plt Ops	12
16-Aug	1700-1730	0.5	Platoon	Formation	Leadership	70
17-Aug	0600-0800	2.0	Platoon	PT	Leadership	70
17-Aug	0800-1130	3.5	Data	UOC setup	Prep/ Recovery	6
17-Aug	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
17-Aug	0800-1130	3.5	Wire	Cable PM	Plt Ops	14
17-Aug	0800-1600	8.0	Radio	FEX 1 SET UP	Prep/ Recovery	15
17-Aug	0900-1100	2.0	Bn	Rifle Range Brief	Leadership	Varies
17-Aug	0900-1100	2.0	Platoon	Healthy Relationship Workshop	Leadership	70
17-Aug	1000-1130	1.5	Radio	FEX 1 Meeting	Prep/ Recovery	15
17-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
17-Aug	1300-1600	3.0	Data	UOC setup	Prep/ Recovery	6
17-Aug	1300-1630	3.5	Maint	Electrostatic Discharge Equipment Protection	Plt Ops	12
17-Aug	1300-1630	3.5	Platoon	Monthly Serialized Inventory	Plt Ops	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
17-Aug	1830-2030	2.0	Softball Team	Softball Game	Recreation	15
18-Aug	0500-1900	14.0	Radio	FEX 1	Student Contact	15
18-Aug	0600-0800	2.0	Platoon	CFT Training	Leadership	70
18-Aug	0700-0900	2.0	Platoon	PME PFT	Leadership	70
18-Aug	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
18-Aug	0800-1130	3.5	Data	FEX 1	Student Contact	6
18-Aug	0800-1400	6.0	Bn	Pistol Range	Leadership	Varies
18-Aug	1000-1400	4.0	Platoon	FAMILY DAY	Leadership	70
18-Aug	1300-1530	2.5	Wire	Call Manager Class	Plt Ops	14
18-Aug	1300-1600	3.0	Data	FEX 1	Student Contact	6
18-Aug	1300-1630	3.5	Maint	Electrostatic Discharge Equipment Protection	Plt Ops	12
18-Aug	1700-1730	0.5	Formation		Leadership	70
19-Aug	0500-1900	14.0	Radio	FEX 1	Student Contact	15
19-Aug	0600-0800	2.0	Platoon	PT	Leadership	70
19-Aug	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
19-Aug	0800-1130	3.5	Data	FEX 1	Student Contact	6
19-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
19-Aug	1300-1530	2.5	Wire	Call Manager Class	Plt Ops	14
19-Aug	1300-1600	3.0	Data	FEX 1	Student Contact	6
19-Aug	1300-1630	3.5	Maint	Testing Ground Electronics Equipment Class	Plt Ops	12
19-Aug	1430-1730	3.0	Platoon	Field Day	Leadership	70
19-Aug	1730-1930	2.0	Softball Team	Softball Game	Recreation	15
19-Aug	1930-2130	2.0	Softball Team	Softball Game	Recreation	15
19-Aug	1930-2130	2.0	Comm Scol	Spouses Day	Leadership	Varies
20-Aug	0600-0800	2.0	Platoon	PT	Leadership	70
20-Aug	0800-0900	1.0	Platoon	Counseling Class	Leadership	70
20-Aug	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
20-Aug	0800-1130	3.5	Data	BCOC lab prep	Prep/ Recovery	6
20-Aug	0800-1600	8.0	Radio	Maintenance Cycle / EKMS Spot Check	Plt Ops	15
20-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
20-Aug	1300-1600	3.0	Data	BCOC lab prep	Prep/ Recovery	6
20-Aug	1300-1600	3.0	Platoon	Social Networking	Leadership	70
20-Aug	1300-1630	3.5	Maint	PMCS On Power Supplies / Maintain Sensitive Area	Plt Ops	12
23-Aug	0630-0800	1.5	Platoon	PT	Leadership	70
23-Aug	0800-1130	3.5	Platoon	Maintenance Standdown/CMR Layout	Plt Ops	70
23-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
23-Aug	1300-1630	3.5	Platoon	Maintenance Standdown/CMR Layout	Plt Ops	70
23-Aug	1400-1600	2.0	Platoon NCO	CO's PME	Leadership	35
23-Aug	1530-1630	1.0	CS Officers	Belleau Wood Brief	Leadership	1
23-Aug	1700-1730	0.5	Platoon	Formation	Leadership	70
24-Aug	0630-0800	1.5	Platoon	PT	Leadership	70
24-Aug	0800-1130	3.5	Platoon	Maintenance Standdown/CMR Layout	Plt Ops	70
24-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
24-Aug	1300-1630	3.5	Platoon	Maintenance Standdown/CMR Layout	Plt Ops	70
24-Aug	1700-1730	0.5	Platoon	Formation	Leadership	70
25-Aug	0600-0800	2.0	Platoon	Bn CFT Lane Monitor from EIP	Leadership	70
25-Aug	0600-0800	2.0	Platoon	CFT Training	Leadership	70
25-Aug	0600-0800	2.0	Platoon	Swim Qual	Leadership	70
25-Aug	0800-1130	3.5	Platoon	Maintenance Standdown/CMR Layout	Plt Ops	70
25-Aug	0900-1130	2.5	EKMS	EKMS Semi-Annual Inspection	Plt Ops	3
25-Aug	1100-1200	1.0	Platoon	Women Equality Day	Leadership	70
25-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
25-Aug	1300-1630	3.5	Platoon	Maintenance Standdown/CMR Layout	Plt Ops	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
25-Aug	1700-1730	0.5	Platoon	Formation	Leadership	70
26-Aug	0800-1130	3.5	Platoon	Maintenance Standdown/CMR Layout	Plt Ops	70
26-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
26-Aug	1300-1630	3.5	Platoon	Maintenance Standdown/CMR Layout	Plt Ops	70
27-Aug	0600-0800	2.0	Platoon	CS Run	Leadership	70
27-Aug	0800-1130	3.5	Platoon	Maintenance Standdown/CMR Layout	Plt Ops	70
27-Aug	1000-1100	1.0	CS SNCOs	PME	Leadership	13
27-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
27-Aug	1300-1630	3.5	Platoon	Maintenance Standdown/CMR Layout	Prep/ Recovery	70
30-Aug	0630-0800	1.5	Platoon	PT	Leadership	70
30-Aug	0800-1130	3.5	Data	Laptop SL3	Plt Ops	6
30-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
30-Aug	1300-1600	3.0	Data	Laptop SL3	Plt Ops	6
30-Aug	1430-1600	1.5	Wire	RSAM Remedial	Plt Ops	14
30-Aug	1700-1730	0.5	Platoon	Formation	Leadership	70
31-Aug	0630-0800	1.5	Platoon	PT	Leadership	70
31-Aug	0800-1100	3.0	Radio	ACOC Radio Demonstration	Student Contact	15
31-Aug	0900-1130	2.5	Platoon	Smart Brief	Plt Ops	70
31-Aug	1130-1300	1.5	Platoon	Chow	Chow	70
31-Aug	1700-1730	0.5	Platoon	Formation	Leadership	70
1-Sep	0630-0800	1.5	Platoon	PT	Leadership	70
1-Sep	0900-1130	2.5	Data	Packet Tracer Lab	Plt Ops	6
1-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
1-Sep	1200-1430	2.5	Data	Router Configuration Lab	Plt Ops	6
1-Sep	1700-1730	0.5	Platoon	Formation	Leadership	70
2-Sep	0630-0800	1.5	Platoon	PT	Leadership	70
2-Sep	0800-1130	3.5	Wire	RSAM TRAINING	Plt Ops	14
2-Sep	0900-1130	2.5	Data	Packet Tracer Lab	Plt Ops	6
2-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
2-Sep	1300-1600	3.0	Data	Packet Tracer Lab	Plt Ops	6
3-Sep	0630-0800	1.5	Platoon	BN RUN	Leadership	70
3-Sep	0900-1130	2.5	Data	Packet Tracer Lab	Plt Ops	6

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
3-Sep	1100-1330	2.5	Data	DDS-R Static Display	Student Contact	6
3-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
7-Sep	0630-0730	1.0	Section	PT	Leadership	Varies
7-Sep	0730-1100	3.5	Platoon	First Day off school (Take kid to school)	Leadership	70
7-Sep	0800-1000	2.0	Radio			15
7-Sep	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
7-Sep	0800-1130	3.5	Data	WPPL Display	Prep/ Recovery	6
7-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
7-Sep	1300-1500	2.0	Radio/Data	ACOC / Swan and WpplD Display	Student Contact	8
7-Sep	1700-1730	0.5	Platoon	Formation	Leadership	70
8-Sep	0630-0730	1.0	Platoon	PT	Leadership	70
8-Sep	0800-1000	2.0	Platoon	Vehicle PM / Start up	Plt Ops	70
8-Sep	0800-1130	3.5	Radio	Class Rehearsals - MUX	Prep/ Recovery	15
8-Sep	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
8-Sep	0800-1630	8.5	Data	Switch Configuration Lab	Prep/ Recovery	6
8-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
8-Sep	1300-1630	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
8-Sep	1300-1630	3.5	Maint	MCI Time	Leadership	12
8-Sep	1300-1630	3.5	Radio	Class Rehearsals - MUX	Prep/ Recovery	15
8-Sep	1700-1730	0.5	Platoon	Formation	Leadership	70
9-Sep	0630-0730	1.0	Platoon	PT	Leadership	70
9-Sep	0800-1100	3.0	Radio	Admin Sep Board	Leadership	15
9-Sep	0800-1130	3.5	Radio	Class Rehearsals - MUX	Prep/ Recovery	15
9-Sep	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
9-Sep	0800-1130	3.5	Maint	2844 POI	Plt Ops	12
9-Sep	0930-1630	7.0	Data	Router and Switch Labs	Prep/ Recovery	6
9-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
9-Sep	1300-1630	3.5	Radio	Class Rehearsals - MUX	Prep/ Recovery	15

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
10-Sep	0630-0730	1.0	Platoon	PT	Leadership	70
10-Sep	0800-1130	3.5	Radio	Class Rehearsals - MUX	Prep/ Recovery	15
10-Sep	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
10-Sep	0800-1130	3.5	Maint	2844 POI	Plt Ops	12
10-Sep	1030-1630	6.0	Data	Router and Switch Labs	Prep/ Recovery	6
10-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
10-Sep	1300-1630	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
13-Sep	0630-0745	1.3	Platoon	PT	Leadership	70
13-Sep	0900-1030	1.5	Platoon	MC Ball Uniform Initial Inspection	Leadership	70
13-Sep	1030-1130	1.0	Maint	Maintenance DPR dictated	Plt Ops	12
13-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
13-Sep	1300-1600	3.0	Radio	MUX BCOC CLASSES	Student Contact	15
13-Sep	1300-1630	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
13-Sep	1300-1630	3.5	Maint	SL-3 Inventories	Plt Ops	12
13-Sep	1300-1630	3.5	Data	SL3	Plt Ops	6
13-Sep	1300-1700	4.0	Wire	RSAM Training	Plt Ops	14
13-Sep	1600-1630	0.5	Platoon	Formation	Leadership	70
14-Sep	0630-0745	1.3	Section	PT	Leadership	Varies
14-Sep	0800-1130	3.5	Wire	RSAM Training	Plt Ops	14
14-Sep	0800-1130	3.5	Data	SL3	Plt Ops	6
14-Sep	0800-1600	8.0	Radio	MUX BCOC CLASSES/PA	Student Contact	15
14-Sep	0800-1630	8.5	Maint	Maintenance DPR dictated	Plt Ops	12
14-Sep	0800-1630	8.5	Maint	SL-3 Inventories	Plt Ops	12
14-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
14-Sep	1300-1545	2.8	Data	Update Record Jackets	Plt Ops	6
14-Sep	1300-1600	3.0	Wire	VX Training	Prep/ Recovery	14
14-Sep	1600-1630	0.5	Platoon	Formation	Leadership	70
15-Sep	0630-0730	1.0	Section	PT	Leadership	Varies
15-Sep	0800-0900	1.0	Platoon	Vehicle PM / Start up	Plt Ops	70
15-Sep	0800-1100	3.0	Data	BST	Leadership	6
15-Sep	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
15-Sep	0800-1130	3.5	Wire	VX Training	Prep/ Recovery	14
15-Sep	0800-1600	8.0	Radio	MUX BCOC CLASSES/PA	Student Contact	15
15-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
15-Sep	1300-1600	3.0	Data	Strap Ex	Prep/ Recovery	6
15-Sep	1300-1600	3.0	Wire	Gear Prep for FEX II	Prep/ Recovery	14
15-Sep	1600-1630	0.5	Platoon	Formation	Leadership	70
16-Sep	0630-0730	1.0	Section	PT	Leadership	Varies
16-Sep	0800-1100	3.0	Data	Build for FEX 2	Prep/ Recovery	6
16-Sep	0800-1130	3.5	Maint	Maintenance DPR dictated	Plt Ops	12
16-Sep	0800-1130	3.5	Maint	2846 POI	Plt Ops	12
16-Sep	0800-1130	3.5	Wire	Op check gear for FEX II	Prep/ Recovery	14
16-Sep	0800-1600	8.0	Radio	MUX BCOC CLASSES/PA	Student Contact	15
16-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
16-Sep	1430-1500	0.5	Platoon	Formation	Leadership	70
16-Sep	1435-1700	2.4	Platoon	Field Day	Leadership	70
17-Sep	0630-0730	1.0	Section	PT	Leadership	Varies
17-Sep	0800-1000	2.0	Platoon	Core Values Guided Discussion	Leadership	70
17-Sep	1000-1600	6.0	Radio	MUX BCOC CLASSES/PA	Student Contact	15
17-Sep	1000-1630	6.5	Maint	Maintenance DPR dictated	Plt Ops	12
17-Sep	1000-1630	6.5	Maint	2846 POI	Plt Ops	12
17-Sep	1000-1630	6.5	Wire	LTI Gear for FEX II	Prep/ Recovery	14
17-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
20-Sep	0630-0730	1.0	Platoon	PT	Leadership	70
20-Sep	0730-0930	2.0	Platoon	DRMO RUN	Plt Ops	70
20-Sep	0800-1600	8.0	All Hands	Strap Ex	Prep/ Recovery	70
20-Sep	0930-1600	6.5	Radio / Mux	FEX II Layout - EDL's / MUX Link	Prep/ Recovery	15
20-Sep	1130-1300	1.5	Platoon	Chow	Chow	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
20-Sep	1530-1630	1.0	Chiefs	FEX II Confirmation Brief	Prep/ Recovery	3
20-Sep	1600-1630	0.5	Platoon	Formation	Leadership	70
21-Sep	0630-0730	1.0	Section	PT	Leadership	Varies
21-Sep	0800-1600	8.0	All Hands	Strap Ex	Prep/ Recovery	70
21-Sep	0830-1600	7.5	Radio / Mux	FEX II Layout - EDL's / MUX Link	Prep/ Recovery	15
21-Sep	1000-1030	0.5	Ops/Radio Chfs	Ops Meeting	Plt Ops	13
21-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
21-Sep	1600-1630	0.5	Platoon	Formation	Leadership	70
21-Sep	TBD	#VALUE!	Wire	DITS Training	Plt Ops	14
22-Sep	0630-0730	1.0	Section	PT	Leadership	Varies
22-Sep	0800-0900	1.0	Wire	DEOS/RSAM setup at AIG	Prep/ Recovery	14
22-Sep	0800-1600	8.0	All Hands	Strap Ex	Prep/ Recovery	70
22-Sep	0830-1030	2.0	NCO's	NCO PME	Leadership	35
22-Sep	0830-1600	7.5	Radio / Mux	FEX II Layout - EDL's / MUX PA*	Prep/ Recovery	15
22-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
22-Sep	1300-1500	2.0	NCO's	NCO PME	Leadership	35
22-Sep	1600-1630	0.5	Platoon	Formation	Leadership	70
22-Sep	TBD	#VALUE!	Wire	DITS Training	Plt Ops	14
23-Sep	0630-0730	1.0	Section	PT	Leadership	Varies
23-Sep	0800-1600	8.0	All Hands	Strap Ex	Prep/ Recovery	70
23-Sep	0830-1600	7.5	Radio / Mux	FEX II Layout - EDL's / MUX Link	Prep/ Recovery	15
23-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
23-Sep	1430-1530	1.0	Section Chiefs	Staff Brief	Plt Ops	13
23-Sep	1600-1630	0.5	Platoon	Formation	Leadership	70
23-Sep	TBD	#VALUE!	Wire	DITS Training	Plt Ops	14
24-Sep	0630-0800	1.5	Platoon	PT	Leadership	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
24-Sep	0800-1600	8.0	All Hands	Strap Ex	Prep/ Recovery	70
24-Sep	0900-1100	2.0	Platoon	Data PME	Leadership	70
24-Sep	1130-1300	1.5	Platoon	Chow	Chow	70
24-Sep	1300-1400	1.0	Wire	Tearing Down DEOS/RSAM	Prep/ Recovery	14
24-Sep	1600-1630	0.5	Platoon	Formation	Leadership	70
27-Sep	0600-2400	18.0	Platoon	FEX II	Student Contact	70
28-Sep	0001-2400	24.0	Platoon	FEX II	Student Contact	70
29-Sep	0001-2400	24.0	Platoon	FEX II	Student Contact	70
30-Sep	0001-1300	13.0	Platoon	FEX II	Student Contact	70
30-Sep	1300-1600	3.0	Platoon	Gear Cleaning and Accountability	Prep/ Recovery	70
1-Oct	0630-0800	1.5	Platoon	PT	Leadership	70
1-Oct	0900-1100	2.0	Platoon	Maint PME	Leadership	70
1-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
1-Oct	1300-1430	1.5	Platoon	Drill	Leadership	70
1-Oct	1430-1630	2.0	Platoon	Field Day	Leadership	70
4-Oct	0730-0830	1.0	Platoon	MC BALL UNIFORM INSP	Leadership	70
4-Oct	0830-1600	7.5	Radio	Maintenance Stand-down	Plt Ops	15
4-Oct	0830-1600	7.5	Wire	DEOS/DITS Training	Plt Ops	14
4-Oct	0830-1600	7.5	Data	Maintenance Stand-down	Plt Ops	6
4-Oct	0830-1600	7.5	Maint	MIMMS/DPR/ERO's	Plt Ops	12
4-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
4-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
5-Oct	0630-0730	1.0	Platoon	Morning Formation	Leadership	70
5-Oct	0745-0900	1.3	Platoon	Motor Stables	Plt Ops	70
5-Oct	0830-1600	7.5	Radio	Maintenance Stand-down	Plt Ops	15
5-Oct	0830-1600	7.5	Data	BCOC Lab Prep	Prep/ Recovery	6
5-Oct	0830-1600	7.5	Wire	DEOS/DITS Training	Plt Ops	14
5-Oct	0830-1600	7.5	Maint	MIMMS/DPR/ERO's	Plt Ops	12
5-Oct	1130-1300	1.5	Platoon	Chow	Chow	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
5-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
6-Oct	0630-0730	1.0	Platoon	Morning Formation	Leadership	70
6-Oct	0745-1100	3.3	Platoon	Tent SL-3 and Storage	Plt Ops	70
6-Oct	0930-1700	7.5	Data	BCOC Labs	Student Contact	6
6-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
6-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
7-Oct	0730-0800	0.5	Platoon	Formation	Leadership	70
7-Oct	0830-1600	7.5	Radio	Maintenance Stand-down	Plt Ops	15
7-Oct	0830-1600	7.5	Wire	DEOS/DITS Training	Plt Ops	14
7-Oct	0830-1600	7.5	Maint	MIMMS/DPR/ERO's	Plt Ops	12
7-Oct	0930-1700	7.5	Data	BCOC Labs	Student Contact	6
7-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
7-Oct	1430-1630	2.0	Platoon	Field Day	Leadership	70
7-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
8-Oct	0630-0800	1.5	Platoon	PT	Leadership	70
8-Oct	0900-1100	2.0	Platoon	Equal Opportunity Brief	Leadership	70
8-Oct	0930-1700	7.5	Data	BCOC Labs	Student Contact	6
8-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
8-Oct	1300-1430	1.5	Platoon	Drill	Leadership	70
8-Oct	1430-1600	1.5	Radio	Maintenance Stand-down	Plt Ops	15
8-Oct	1430-1600	1.5	Maint	MIMMS/DPR/ERO's	Plt Ops	12
8-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
12-Oct	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
12-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
12-Oct	0600-0800	2.0	BCP Marines	BCP training w/ the Company	Leadership	8
12-Oct	0730-0800	0.5	Platoon	Morning Formation	Leadership	70
12-Oct	0730-1630	9.0	Wire	Dits Prep for PA	Prep/ Recovery	14
12-Oct	0730-1630	9.0	Data	Server Builds	Prep/ Recovery	6
12-Oct	0730-1630	9.0	Radio	Finishing RJ and SL-3 Inventory	Plt Ops	15

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
12-Oct	0730-1630	9.0	Maint	Daily Maint Schedule/SL-3 Inventory	Plt Ops	12
12-Oct	0900-1000	1.0	Platoon	Motor Stables	Plt Ops	70
12-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
12-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
13-Oct	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
13-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
13-Oct	0730-0800	0.5	Platoon	Morning Formation	Leadership	70
13-Oct	0730-1130	4.0	Wire	PA Prep	Prep/ Recovery	14
13-Oct	0730-1130	4.0	Radio	SWAN/MUX Training	Plt Ops	15
13-Oct	0730-1630	9.0	Data	Server Builds	Prep/ Recovery	6
13-Oct	0730-1630	9.0	Maint	Daily Maint Schedule/SL-3 Inventory	Plt Ops	12
13-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
13-Oct	1300-1600	3.0	Designated	CFT w/ Company	Leadership	Varies
13-Oct	1300-1600	3.0	Radio	SWAN/MUX Training	Plt Ops	15
13-Oct	1300-1700	4.0	Wire	Dits PA	Prep/ Recovery	14
13-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
14-Oct	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
14-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
14-Oct	0600-0900	3.0	Platoon	Gas Chamber	Leadership	70
14-Oct	0730-0800	0.5	Platoon	Formation	Leadership	70
14-Oct	0730-1130	4.0	Wire	MCI Time	Leadership	14
14-Oct	0730-1600	8.5	Radio	SWAN/MUX Training	Plt Ops	15
14-Oct	0830-1600	7.5	Maint	Daily Maint Schedule/SL-3 Inventory	Plt Ops	12
14-Oct	0930-1700	7.5	Data	Server Builds	Prep/ Recovery	6
14-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
14-Oct	1430-1630	2.0	Platoon	Field Day	Leadership	70
14-Oct	1630-1700	0.5	Platoon	Formation	Leadership	70
15-Oct	0600-0800	2.0	Platoon	Comm School CFT	Leadership	70
15-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
15-Oct	0900-1100	2.0	Platoon	PME TIME	Leadership	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
15-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
15-Oct	1300-1600	3.0	Platoon	Drill	Leadership	70
15-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
18-Oct	0530-0645	1.3	Section	Physical Training	Leadership	Varies
18-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
18-Oct	0645-0730	0.8	All	Changeover		70
18-Oct	0730-0800	0.5	Platoon	Accountability Formation	Leadership	70
18-Oct	0730-1100	3.5	Platoon	Tent SL-3 / inventory	Plt Ops	70
18-Oct	0900-1630	7.5	Radio	HPW connect to server class	Prep/ Recovery	15
19-Oct	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
19-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
19-Oct	0600-0800	2.0	BCP Marines	BCP training w/ the Company	Leadership	8
19-Oct	0730-0800	0.5	Platoon	Morning Formation	Leadership	70
19-Oct	0730-0830	1.0	Platoon	Motor Stables	Plt Ops	70
19-Oct	0730-1630	9.0	Data	Building Domain Controllers/Servers Class	Prep/ Recovery	6
19-Oct	0830-0945	1.3	Designated	Commandants going away speech	Leadership	Varies
19-Oct	0830-1630	8.0	Wire	Joint LTI's	Plt Ops	14
19-Oct	0830-1630	8.0	Radio	Record Jackets / SL-3 inventory	Plt Ops	15
19-Oct	0830-1630	8.0	Maint	Joint LTI's / DPR Dictated	Plt Ops	12
19-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
19-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
20-Oct	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
20-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
20-Oct	0730-0800	0.5	Platoon	Morning Formation	Leadership	70
20-Oct	0730-1630	9.0	Designated	Solar Power Class	Plt Ops	Varies
20-Oct	0730-1630	9.0	Designated	COC Class	Student Contact	15
20-Oct	0730-1630	9.0	Wire	Joint LTI's	Plt Ops	14
20-Oct	0730-1630	9.0	Maint	Joint LTI's / DPR Dictated	Plt Ops	12
20-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
20-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
21-Oct	0530-0730	2.0	Sections	Physical Training	Leadership	Varies

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
21-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
21-Oct	0730-0800	0.5	Platoon	Formation	Leadership	70
21-Oct	0730-1130	4.0	Wire	MCI/CMDNT Reading List/MarineNet	Leadership	14
21-Oct	0730-1600	8.5	Radio	Finish Record Jackets	Plt Ops	15
21-Oct	0730-1630	9.0	Designated	COC Class	Student Contact	15
21-Oct	0830-1600	7.5	Maint	DPR Dictated	Plt Ops	12
21-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
21-Oct	1400-1630	2.5	Platoon	Field Day	Leadership	70
21-Oct	1500-1700	2.0	Platoon	MCCS Class	Leadership	70
21-Oct	1700-1730	0.5	Platoon	Formation	Leadership	70
22-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
22-Oct	0630-0730	1.0	Platoon	Physical training (NCO Led)	Leadership	70
22-Oct	0730-1630	9.0	Designated	COC Class	Student Contact	15
22-Oct	0900-1100	2.0	Platoon	PME TIME	Leadership	70
22-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
22-Oct	1300-1600	3.0	Platoon	Drill	Leadership	70
22-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
25-Oct	0530-0645	1.3	Section	Physical Training	Leadership	Varies
25-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
25-Oct	0645-0730	0.8	All	Changeover		70
25-Oct	0730-0800	0.5	Platoon	Accountability Formation	Leadership	70
25-Oct	0730-0830	1.0	Radio	SWAN PA Prep	Prep/ Recovery	15
25-Oct	0730-1630	9.0	Maint	DPR Dictated	Plt Ops	12
25-Oct	0730-1630	9.0	Wire	SL3 DEOS W/ FAM KITS	Plt Ops	14
25-Oct	0730-1630	9.0	Data	WPPL PA	Student Contact	6
25-Oct	0800-1600	8.0	Designated	Pistol Range	Leadership	Varies
25-Oct	0800-1600	8.0	Designated	Barracks Furniture Move	Leadership	Varies
25-Oct	0830-1630	8.0	Radio	SWAN PA	Student Contact	15
25-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
25-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
26-Oct	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
26-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
26-Oct	0600-0800	2.0	BCP Marines	BCP training w/ the Company	Leadership	8
26-Oct	0730-0800	0.5	Platoon	Morning Formation	Leadership	70
26-Oct	0730-0830	1.0	Platoon	Motor Stables	Plt Ops	70
26-Oct	0730-0830	1.0	Radio	SWAN PA Prep	Prep/ Recovery	15
26-Oct	0730-1630	9.0	Data	WPPL PA	Student Contact	6
26-Oct	0730-1630	9.0	Wire	OP Checking DITS Suite	Prep/ Recovery	14
26-Oct	0830-1630	8.0	Designated	Barracks Furniture Move	Leadership	Varies
26-Oct	0830-1630	8.0	Designated	Pistol Range	Leadership	Varies
26-Oct	0830-1630	8.0	Radio	SWAN PA	Student Contact	15
26-Oct	0830-1630	8.0	Maint	DPR Dictated	Plt Ops	12
26-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
26-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
27-Oct	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
27-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
27-Oct	0730-0800	0.5	Platoon	Morning Formation	Leadership	70
27-Oct	0730-0800	0.5	Data	Prep for DDSR class	Prep/ Recovery	6
27-Oct	0730-1600	8.5	Radio	MUX/Radio Cross Training	Plt Ops	15
27-Oct	0730-1600	8.5	Maint	DPR Dictated	Plt Ops	12
27-Oct	0730-1600	8.5	Wire	SL3 RSAM W/ FAM KITS	Plt Ops	14
27-Oct	0800-1600	8.0	Data	DDSR class	Prep/ Recovery	6
27-Oct	0830-1630	8.0	Designated	Pistol Range	Leadership	Varies
27-Oct	0830-1630	8.0	Designated	Barracks Furniture Move	Leadership	Varies
27-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
27-Oct	1600-1700	1.0	Platoon	Troop Appreciation Day	Leadership	70
28-Oct	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
28-Oct	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
28-Oct	0730-0800	0.5	Platoon	Formation	Leadership	70
28-Oct	0730-1130	4.0	Radio	MUX/Radio Cross Training	Plt Ops	15

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
28-Oct	0730-1130	4.0	Maint	DPR Dictated	Plt Ops	12
28-Oct	0730-1130	4.0	Wire	Op Check Cables and Phones	Plt Ops	14
28-Oct	0730-1130	4.0	Data	Prepping Virtual Machines for FEX III	Prep/ Recovery	6
28-Oct	0730-1600	8.5	Designated	Pistol Range	Leadership	Varies
28-Oct	0730-1600	8.5	Designated	Barracks Furniture Move	Leadership	Varies
28-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
28-Oct	1300-1415	1.3	Platoon	Drill	Leadership	70
28-Oct	1430-1500	0.5	Platoon	Formation	Leadership	70
28-Oct	1430-1630	2.0	Platoon	Field Day Formation/Field Day	Leadership	70
29-Oct	0630-0830	2.0	Platoon	JRS Stamina Crse	Leadership	70
29-Oct	0730-1600	8.5	Designated	Pistol Range	Leadership	Varies
29-Oct	0730-1600	8.5	Designated	Barracks Furniture Move	Leadership	Varies
29-Oct	0930-1130	2.0	Platoon	DATA PME Class	Leadership	70
29-Oct	1130-1300	1.5	Platoon	Chow	Chow	70
29-Oct	1300-1600	3.0	Platoon	Drill	Leadership	70
29-Oct	1600-1630	0.5	Platoon	Formation	Leadership	70
1-Nov	0530-0645	1.3	Section	Physical Training	Leadership	Varies
1-Nov	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
1-Nov	0645-0730	0.8	All	Changeover		70
1-Nov	0730-0800	0.5	Platoon	Accountability Formation	Leadership	70
1-Nov	0730-1130	4.0	Radio	SL-3/Joint LTI's	Plt Ops	15
1-Nov	0730-1630	9.0	Maint	DPR Dictated / Joint LTI's w/ Radio	Plt Ops	12
1-Nov	0730-1630	9.0	Wire	Updating Record Jackets	Plt Ops	14
1-Nov	0730-1630	9.0	Data	StrapEx between Wppl, UOC, and DDSR	Prep/ Recovery	6
1-Nov	0900-1030	1.5	Platoon	Promotion Formations	Leadership	70
1-Nov	1130-1300	1.5	Platoon	Chow	Chow	70
1-Nov	1300-1630	3.5	Radio	SL-3/Joint LTI's	Plt Ops	15
1-Nov	1630-1700	0.5	Platoon	Formation	Leadership	70
2-Nov	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
2-Nov	0530-0800	2.5	BCP Marines	BCP training w/ the Company	Leadership	8
2-Nov	0600-0800	2.0	Designated	MCMAP Training	Leadership	12

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
2-Nov	0730-0800	0.5	Platoon	Morning Formation	Leadership	70
2-Nov	0730-0830	1.0	Platoon	Motor Stables	Plt Ops	70
2-Nov	0830-1630	8.0	Radio	SL-3/Joint LTI's	Plt Ops	15
2-Nov	0830-1630	8.0	Data	StrapEx between Wppl, UOC, and DDSR	Prep/ Recovery	6
2-Nov	0830-1630	8.0	Wire	Record Jackets / LTI's	Plt Ops	14
2-Nov	0900-0930	0.5	Maint	Service "B" Inspections	Leadership	12
2-Nov	0945-1630	6.8	Maint	DPR Dictated	Plt Ops	12
2-Nov	1130-1300	1.5	Platoon	Chow	Chow	70
2-Nov	1630-1700	0.5	Platoon	Formation	Leadership	70
3-Nov	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
3-Nov	0600-0800	2.0	Designated	MCMAP Training	Leadership	12
3-Nov	0730-0800	0.5	Platoon	Morning Formation	Leadership	70
3-Nov	0730-1500	7.5	Radio	SL-3/Joint LTI's	Plt Ops	15
3-Nov	0730-1500	7.5	Maint	DPR Dictated	Plt Ops	12
3-Nov	0730-1500	7.5	Wire	Record Jackets / LTI's	Plt Ops	14
3-Nov	0730-1500	7.5	Data	StrapEx between Wppl, UOC, and DDSR	Prep/ Recovery	6
3-Nov	1430-1500	0.5	Platoon	Formation	Leadership	70
3-Nov	1500-1700	2.0	Platoon	Troop Appreciation Day	Leadership	70
4-Nov	0630-0830	2.0	Platoon	O'Course	Leadership	70
4-Nov	0930-1000	0.5	Platoon	Formation	Leadership	70
4-Nov	0930-1130	2.0	Radio	SL-3/Joint LTI's	Plt Ops	15
4-Nov	0930-1130	2.0	Maint	DPR Dictated	Plt Ops	12
4-Nov	0930-1130	2.0	Wire	PM/Op Check Phones	Plt Ops	14
4-Nov	0930-1130	2.0	Data	StrapEx between Wppl, UOC, and DDSR	Prep/ Recovery	6
4-Nov	1130-1300	1.5	Platoon	Chow	Chow	70
4-Nov	1300-1415	1.3	Platoon	Drill	Leadership	70
4-Nov	1430-1630	2.0	Platoon	Field Day Formation/Field Day	Leadership	70
4-Nov	1630-1700	0.5	Platoon	Formation	Leadership	70
5-Nov	0730-0800	0.5	Platoon	Formation	Leadership	70
5-Nov	0730-1600	8.5	Platoon	MC Birthday Ball	Leadership	70
5-Nov	0745-0900	1.3	Platoon	PME	Leadership	70
5-Nov	1000-1130	1.5	Platoon	TF58	Leadership	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
8-Nov	0600-0730	1.5	Platoon	Physical Training	Leadership	70
8-Nov	0730-0820	0.8	Platoon	Changeover		70
8-Nov	0830-0900	0.5	Platoon	Accountability Formation	Leadership	70
8-Nov	0835-0930	0.9	Platoon	Service "B" Inspections	Leadership	70
8-Nov	0930-1630	7.0	Maint	DPR Dictated	Plt Ops	12
8-Nov	0930-1630	7.0	Radio	FEX III Preparation	Prep/ Recovery	15
8-Nov	0930-1630	7.0	Wire	FEX III Preparation	Prep/ Recovery	14
8-Nov	0930-1630	7.0	Data	FEX III Preparation	Prep/ Recovery	6
8-Nov	1130-1300	1.5	Platoon	Chow	Chow	70
8-Nov	1630-1700	0.5	Platoon	Formation	Leadership	70
9-Nov	0530-0730	2.0	Sections	Physical Training	Leadership	Varies
9-Nov	0530-0800	2.5	BCP Marines	BCP training w/ the Company	Leadership	8
9-Nov	0730-0800	0.5	Platoon	Morning Formation	Leadership	70
9-Nov	0730-0830	1.0	Platoon	Service "B" Inspections	Leadership	70
9-Nov	0830-0930	1.0	Platoon	Motor Stables	Plt Ops	70
9-Nov	0830-0930	1.0	BCP/REM	Weigh In	Leadership	8
9-Nov	0930-1630	7.0	Maint	DPR Dictated	Plt Ops	12
9-Nov	0930-1630	7.0	Radio	FEX III Preparation	Prep/ Recovery	15
9-Nov	0930-1630	7.0	Wire	FEX III Preparation	Prep/ Recovery	14
9-Nov	0930-1630	7.0	Data	FEX III Preparation	Prep/ Recovery	6
9-Nov	1030-1330	3.0	Designated	FEX III Confirmation Brief	Prep/ Recovery	Varies
9-Nov	1130-1300	1.5	Platoon	Chow	Chow	70
9-Nov	1630-1700	0.5	Platoon	Formation	Leadership	70
10-Nov	0630-0830	2.0	Platoon	Comm School Run	Leadership	70
10-Nov	0915-0945	0.5	Platoon	Morning Formation	Leadership	70
10-Nov	0920-1630	7.2	Maint	DPR Dictated	Plt Ops	12
10-Nov	0920-1630	7.2	Radio	FEX III Preparation	Prep/ Recovery	15
10-Nov	0920-1630	7.2	Wire	FEX III Preparation	Prep/ Recovery	14

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
10-Nov	0920-1630	7.2	Data	FEX III Preparation	Prep/ Recovery	6
10-Nov	1000-1200	2.0	Designated	USMC Birthday Pageant	Leadership	Varies
10-Nov	1630-1700	0.5	Platoon	Formation	Leadership	70
12-Nov	0600-0800	2.0	Platoon	Physical Training	Leadership	70
12-Nov	0600-0900	3.0	Designated	Set Up Static Display for Afghan S-6	Prep/ Recovery	Varies
12-Nov	0900-0930	0.5	Platoon	Morning Formation	Leadership	70
12-Nov	0900-1100	2.0	Designated	Afghan S-6 Walk thru	Prep/ Recovery	Varies
12-Nov	0915-1130	2.3	Platoon	PME	Leadership	70
12-Nov	1300-1430	1.5	Platoon	COD		70
15-Nov	0600-1800	12.0	Designated	R/R	Leadership	Varies
15-Nov	0600-2400	18.0	Platoon	FEX III	Student Contact	70
15-Nov	0900-1000	1.0	Designated	Pistol Range Brief	Leadership	Varies
16-Nov	0001-2400	24.0	Platoon	FEX III	Student Contact	70
16-Nov	0600-1800	12.0	Designated	R/R	Leadership	Varies
17-Nov	0001-2400	24.0	Platoon	FEX III	Student Contact	70
17-Nov	0600-1800	12.0	Designated	R/R	Leadership	Varies
18-Nov	0001-2400	24.0	Platoon	FEX III	Student Contact	70
18-Nov	0600-1800	12.0	Designated	R/R	Leadership	Varies
18-Nov	1200-1400	2.0	RBE	Bring and Cook Food at Field	Prep/ Recovery	25
19-Nov	0700-0800	1.0	Platoon	Retrograde from field	Prep/ Recovery	70
19-Nov	0800-1100	3.0	Platoon	Gear accountability and cleaning	Prep/ Recovery	70
19-Nov	1100-1130	0.5	Platoon	Safety Brief	Leadership	70
22-Nov	0700-0800	1.0	Platoon	Physical Training	Leadership	70
22-Nov	0900-1000	1.0	Platoon	96 Safety Forms	Plt Ops	70
22-Nov	0900-1600	7.0	Platoon	Maintenance Day (R/J, Gear Inducted if needed, etc...)	Plt Ops	70
22-Nov	1330-1430	1.0	Designated	Gear Turn in at RIF	Leadership	Varies
22-Nov	1600-1630	0.5	Platoon	Formation	Leadership	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
22-Nov	1600-1800	2.0	Designated	Service Bravo Uniform Prep Time	Leadership	Varies
22-Nov	1800-2000	2.0	Designated	Service Bravo Uniform Inspection	Leadership	Varies
23-Nov	0700-1100	4.0	Designated	Pistol Range	Leadership	Varies
23-Nov	0730-0830	1.0	Platoon	MOTOR STABLES	Plt Ops	70
23-Nov	0800-0900	1.0	Designated	R/R Brief	Leadership	Varies
23-Nov	0900-1000	1.0	Designated	Get Safety Gear Ready for PT next day	Leadership	Varies
23-Nov	0900-1600	7.0	Platoon	Maintenance Day (R/J, Gear Inducted if needed, etc...)	Plt Ops	70
23-Nov	1600-1630	0.5	Platoon	Formation	Leadership	70
24-Nov	0700-0830	1.5	Platoon	PT	Leadership	70
24-Nov	0700-1100	4.0	Designated	Working Party setting up for rest of Family Day	Leadership	Varies
24-Nov	0830-0845	0.2	Platoon	Safety Brief	Leadership	70
24-Nov	1000-1200	2.0	Platoon	EIP Thanksgiving Day	Leadership	70
29-Nov	0730-0800	0.5	Platoon	Formation	Leadership	70
29-Nov	0730-1630	9.0	Radio	Teachbacks VRC-103, PRC 117, PRC-150, PRC 152, VRC-110	Prep/ Recovery	15
29-Nov	0730-1630	9.0	Data	Building a Ghost Cast Server / SL-3 and Record Jackets		6
29-Nov	0730-1630	9.0	Maint	DPR Dictated	Plt Ops	12
29-Nov	0730-1630	9.0	Wire	DEOS Training	Plt Ops	14
29-Nov	1030-1130	1.0	Radio	Gear Inventories / Record Jackets	Plt Ops	15
29-Nov	1130-1300	1.5	Platoon	Chow	Chow	70
29-Nov	1600-1630	0.5	Platoon	Formation	Leadership	70
30-Nov	0530-0700	1.5	Section	Physical Training	Leadership	Varies
30-Nov	0730-0800	0.5	Platoon	Formation	Leadership	70
30-Nov	0730-0830	1.0	Platoon	Motor Stables	Plt Ops	70
30-Nov	0730-1630	9.0	Maint	DPR Dictated	Plt Ops	12
30-Nov	0730-1630	9.0	Data	Building a Ghost Cast Server / SL-3 and Record Jackets		6
30-Nov	0730-1630	9.0	Wire	DEOS Training	Plt Ops	14

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
30-Nov	0830-1130	3.0	Radio	Record Jackets / FASMO Prep	Plt Ops	15
30-Nov	1130-1300	1.5	Platoon	Chow	Chow	70
30-Nov	1300-1400	1.0	Radio	Teachbacks	Prep/ Recovery	15
30-Nov	1400-1600	2.0	Radio	Record Jackets / FASMO Prep	Plt Ops	15
30-Nov	1600-1630	0.5	Platoon	Formation	Leadership	70
1-Dec	0530-0700	1.5	Section	Physical Training	Leadership	Varies
1-Dec	0600-1800	12.0	Designated	R/R	Leadership	Varies
1-Dec	0730-0800	0.5	Platoon	Formation	Leadership	70
1-Dec	0730-1630	9.0	Radio	Teachbacks MRC148, PRC148, VRC 111	Prep/ Recovery	15
1-Dec	0730-1630	9.0	Maint	DPR Dictated	Plt Ops	12
1-Dec	0730-1630	9.0	Data	Building a Ghost Cast Server / SL-3 and Record Jackets		6
1-Dec	0730-1630	9.0	Wire	Record Jackets / FASMO PREP	Plt Ops	14
1-Dec	0830-1145	3.3	Designated	Welcome Aboard Brief	Leadership	Varies
1-Dec	1130-1300	1.5	Platoon	Chow	Chow	70
1-Dec	1600-1630	0.5	Platoon	Formation	Leadership	70
2-Dec	0530-0700	1.5	Section	Physical Training	Leadership	Varies
2-Dec	0730-0800	0.5	Platoon	Formation	Leadership	70
2-Dec	0730-1400	6.5	Radio	Teachbacks VRC 89, VRC 90, VRC 88	Prep/ Recovery	15
2-Dec	0730-1400	6.5	Maint	DPR Dictated	Plt Ops	12
2-Dec	0730-1400	6.5	Data	Record Jacket / SL-3	Plt Ops	6
2-Dec	0730-1400	6.5	Wire	SL-3 / Record jacket	Plt Ops	14
2-Dec	0900-1000	1.0	Designated	Rifle Range Brief	Leadership	Varies
2-Dec	1130-1300	1.5	Platoon	Chow	Chow	70
2-Dec	1330-1400	0.5	Maint	SVC "A" Uniform Inspection for fit	Leadership	12
2-Dec	1400-1500	1.0	SNCO's	Meeting	Leadership	13
2-Dec	1400-1600	2.0	Platoon	Field Day	Leadership	70
2-Dec	1600-1630	0.5	Platoon	Formation	Leadership	70
3-Dec	0700-0800	1.0	Platoon	Physical Training	Leadership	70

Date	Time	Hours	Personnel	Subject	Time Use	Number of Personnel Required
3-Dec	0800-0800	-		Meritorious Board Packages Due to SSgt Berry	Leadership	Varies
3-Dec	0900-1100	2.0	Platoon	PME Wire	Leadership	70
3-Dec	1130-1300	1.5	Platoon	Chow	Chow	70
3-Dec	1130-1300	1.5	Platoon	Safety Brief	Leadership	70
3-Dec	1200-1200	-	Designated	MBST		Varies
3-Dec	1300-1400	1.0	Wire	Svc "A" Uniform Inspection for fit	Leadership	14
3-Dec	1300-1400	1.0	Data	Image Lap tops	Prep/ Recovery	6
3-Dec	1300-1400	1.0	Radio	Svc "A" Uniform Inspection for fit	Leadership	15
3-Dec	1400-1500	1.0	Platoon	Drill	Leadership	70

Appendix E Communications School Equipment Weight and Volume

Table E-1 provides the weight and volume of the equipment to be moved from Quantico to 29 Palms. The equipment quantities were provided by the Communications School.

Table E-1. Communications School Equipment Weight and Volume

TAMCN	ITEM NAME	NUMBER TO MOVE	WEIGHT (LBS)	VOLUME (Cubic Feet)	SOURCE	REMARKS	TOTAL WEIGHT (LBS)	TOTAL VOLUME (Cubic Feet)	SHIPPING MODE
A00617	MAST SECTION	6	1,059.6	54.3	TM 11409A-OR	Includes TSSR, EPLRS, MRC154A add ons	6,357.6	325.5	Dry Van
A00677	RADIO SET	7	9,800.0	782.1	SL-3-11216A	TAMCN includes vehicle	68,600.0	5,474.9	Flatbed
A00697	RADIO SET	0	34.0	0.5	SL-3-11247A		0.0	0.0	Dry Van
A01187	RADIO SET	20	1.1	0.0	SL-3-11372A		22.0	0.7	Dry Van
A01247	COMMUNICATION SYSTE	10	247.1	19.5	FP 5895/3		2,471.0	195.0	Dry Van
A01257	COMMUNICATION SYSTE	4	1,084.9	78.4	FP 5895/3		4,339.6	313.4	Dry Van
A01267	MULTI-BAND FREQUENC	4	55.0	1.3	SL-3-11255B		220.0	5.1	Dry Van
A01327	COMMUNICATION SYSTE	4	879.2	62.9	FP 5895/3		3,516.8	251.7	Dry Van
A01397	RADIO SET	2	27.0	0.8	SL-3-11305A		54.0	1.5	Dry Van
A01537	RADIO TERMINAL SET	6	1,185.0	4.8	TM 11375A-ID		7,110.0	28.7	Dry Van
A01727	POWER SUPPLY,UNINTE	12	125.0	5.0	FP 2005		1,500.0	60.0	Dry Van
A01737	SECURITY DATA SYSTE	3	173.0	8.0	FP 2005		519.0	24.0	Dry Van
A01747	SWITCHING SET,COMMU	3	207.0	10.0	FP 2005		621.0	30.0	Dry Van
A01757	COMPUTER,DIGITAL DA	3	17.0	1.0	FP 2005		51.0	3.0	Dry Van
A01767	SWITCHING GROUP,DIG	12	142.0	7.0	FP 2005		1,704.0	84.0	Dry Van
A01777	COMPUTER SYSTEM,DIG	3	159.0	7.0	FP 2005		477.0	21.0	Dry Van
A01977	CORE MEMORY	3	125.2	5.0	FP 2005		375.6	15.0	Dry Van
A02347	SATELLITE COMMUNICA	1	428.0	46.6	FP 2050		428.0	46.6	Dry Van
A02387	MAINTENANCE KIT,ELE	8	1,480.0	98.9	FP 2050		11,840.0	791.0	Dry Van
A02407	MAINTENANCE KIT,ELE	1	292.0	17.7	FP 2050		292.0	17.7	Dry Van
A02417	SATELLITE COMMUNICA	1	919.0	106.1	FP 2050		919.0	106.1	Dry Van
A02437	NETWORK MANAGEMENT	2	336.0	16.0	FP 2050		672.0	32.1	Dry Van
A02447	NETWORK MANAGEMENT	1	225.0	11.9	FP 2050		225.0	11.9	Dry Van
A02557	COMBAT OPERATIONS C	1	11,981.0	1,469.4	TM 2000-OD/2C		11,981.0	1,469.4	Dry Van
A02727	RADIO SET CONTROL G	8	6.4	0.2	SL-3-11686A		51.2	1.3	Dry Van
A02737	RADIO SET	4	32.0	0.6	SL-3-11496A		128.0	2.4	Dry Van

TAMCN	ITEM NAME	NUMBER TO MOVE	WEIGHT (LBS)	VOLUME (Cubic Feet)	SOURCE	REMARKS	TOTAL WEIGHT (LBS)	TOTAL VOLUME (Cubic Feet)	SHIPPING MODE
A02787	RADIO SET	2	375.0	64.9	WPPL_Lite_120910 from www.telecomsys.com		750.0	129.8	Dry Van
A04257	M-DACT	6	7.5	0.1	TM 2000-OD/2C		45.0	0.6	Dry Van
A06527	CONVERTER FIBER OPT	20	20.0	0.4	TM 2000-OD/2C		400.0	7.2	Dry Van
A12257	EPLRS NETWORK MANAG	1	20.5	1.2	TM 2000-OD/2C		20.5	1.2	Dry Van
A12607	NAVIGATION SET,SATE	12	3.0	0.1	TM 2000-OD/2C		36.0	0.7	Dry Van
A19577	RADIO SET	13	5,190.0	487.0	SL-3-09730B	TAMCN includes vehicle	67,470.0	6,331.0	Flatbed
A20427	RADIO,HIGH FREQUENC	12	10.0	4.7	TM 2000-OD/2C		120.0	56.6	Dry Van
A20437	MBITR URBAN VERSION	16	7.4	0.5	ULSS 003200-15A		118.4	7.7	Dry Van
A20687	RADIO SET	9	15.9	0.2	TM 2000-OD/2C		143.1	1.7	Dry Van
A20707	RADIO SET	62	22.0	1.0	TM 2000-OD/2C		1,364.0	62.0	Dry Van
A20787	RADIO SET	1	140.1	1.7	ULSS 001991-15		140.1	1.7	Dry Van
A20797	RADIO SET	5	21.0	1.5	TM 2000-OD/2C		105.0	7.4	Dry Van
A21527	RADIO SET	9	27.0	0.3	TM 2000-OD/2C		243.0	2.3	Dry Van
A21677	RADIO SET	3	43.0	2.0	TM 2000-OD/2C		129.0	6.0	Dry Van
A21687	RADIO SET	2	99.5	1.1	ULSS 001991-15		199.0	2.3	Dry Van
A70217	COUNTER,ELECTRONIC	2	7.7	0.2	ULSS 005476-15		15.4	0.5	Dry Van
A70517	METER,POWER FACTOR	1	10.0	1.5	ULSS-002695-15		10.0	1.5	Dry Van
A70527	GENERATOR,SIGNAL	2	50.0	1.7	SL-3-09792A		100.0	3.3	Dry Van
A70557	TEST SET,RADIO FREQ	2	3.0	0.1	SL-3-09916A		6.0	0.1	Dry Van
A70577	OHMMETER	2	4.0	2.9	ULSS 007391-15		8.0	5.8	Dry Van
A70597	OHMMETER	5	8.0	0.6	ULSS 007291-15		40.0	2.8	Dry Van
A70607	OSCILLOSCOPE	1	29.8	1.6	SL-3-11277A		29.8	1.6	Dry Van
A70727	ADAPTER,TEST	1	16.0	0.8	SL-3-09419B		16.0	0.8	Dry Van
A70807	TEST SET,RADIO	8	12.0	0.2	SL-3-11290A		96.0	1.3	Dry Van
A70817	TEST SET,TELECOMMUN	2	46.0	2.9	SL-3-09608A		92.0	5.9	Dry Van
A70827	TEST SET,RADIO	2	48.0	1.6	SL-3-09311A		96.0	3.2	Dry Van
A70847	ANALYZER,LOCAL AREA	1	1.7	0.0	SL-3-10812A		1.7	0.0	Dry Van
A70867	REFLECTOMETER,OPTIC	2	7.1	0.1	SL-3-10156A		14.1	0.3	Dry Van
A77057	POWER SUPPLY	10	44.0	1.0	TM 12359A-OD/B		440.0	10.0	Dry Van
A77067	POWER SUPPLY	6	14.0	0.4	TM 12359A-OD/B		84.0	2.4	Dry Van
A79002	TOOL KIT,ELECTRONIC	9	35.0	1.5	SL-3-09015A		315.0	13.4	Dry Van
A79022	TOOL KIT,ELECTRONIC	3	75.0	3.7	SL-3-11477A		225.0	11.1	Dry Van

TAMCN	ITEM NAME	NUMBER TO MOVE	WEIGHT (LBS)	VOLUME (Cubic Feet)	SOURCE	REMARKS	TOTAL WEIGHT (LBS)	TOTAL VOLUME (Cubic Feet)	SHIPPING MODE
A79207	SPLICING KIT,FIBER	1	22.0	1.9	SL-3-11088A		22.0	1.9	Dry Van
A80107	TELEPHONE,SECURE UN	20	7.0	0.3	TM 2000-OD/2C		140.0	5.8	Dry Van
A80237	TRANSFER UNIT,CRYPT	44	3.5	6.5	TM 2000-OD/2C		154.0	284.3	Dry Van
A80247	READER,PUNCHED TAPE	2	1.0	1.0	TM 2000-OD/2C		2.0	2.0	Dry Van
A80277	VPA ASSEMBLY	30	21.0	1.0	TM 2000-OD/2C		630.0	30.0	Dry Van
A80317	SPEECH EQUIPMENT	15	5.0	1.0	TM 2000-OD/2C		75.0	15.0	Dry Van
A80507	CASE,BATTERY ASSEMB	17	1.1	1.0	TM 2000-OD/2C		18.7	17.0	Dry Van
A81007	RECEIVER-TRANSMITTE	25	15.4	0.2	TM 2000-OD/2C		385.0	5.3	Dry Van
A91002	COMPUTER,GP,LAPTOP	30	9.0	1.0		Estimated	270.0	30.0	Dry Van
A93002	COMP,GP WORKSTATION	228	25.0	3.0		Estimated	5,700.0	684.0	Dry Van
B00277	PANEL,POWER DISTRIB	4	40.3	2.4	TM 11275-15/3D		161.2	9.6	Dry Van
B00287	PANEL,POWER DISTRIB	4	44.1	2.4	TM 11275-15/3D		176.4	9.6	Dry Van
B00297	PANEL,POWER DISTRIB	4	81.2	3.1	TM 11275-15/3D		324.8	12.4	Dry Van
B05797	LOAD BANK,ELECTRICA	1	856.0	67.0	TM 11275-15/3D		856.0	67.0	Flatbed
B07307	GENERATOR SET,DIESE	2	304.0	14.6	TM 11275-15/3D		608.0	29.2	Dry Van
B08917	GENERATOR SET,DIESE	9	1,140.0	41.0	TM 11275-15/3D		10,260.0	369.0	Flatbed
B25667	FORKLIFT,ROUGH,TERR	1	13,450.0	901.9	TM 11275-15/3D		13,450.0	901.9	Flatbed
C44332	SHIPPING AND STORAG	7	1,800.0	260.0	ULSS-003980-15		12,600.0	1,820.0	Flatbed
C64902	TOOL KIT,GENERAL ME	2	120.0	3.5	FP 11668A	Used C79152 As Proxy	240.0	7.0	Dry Van
C79152	TOOL KIT,GENERAL ME	2	120.0	3.5	FP 11668A		240.0	7.0	Dry Van
D00177	LIGHT TACTICAL TRAI	1	1,175.0	264.8	TM 11240-ODA		1,175.0	264.8	Flatbed
D00227	TRUCK,UTILITY	8	6,400.0	733.8	TM 11240-ODA		51,200.0	5,870.3	Flatbed
D00857	CHASSIS,TRAILER	12	1,340.0	218.8	TM 11240-ODA		16,080.0	2,626.1	Flatbed
D01987	TRUCK,CARGO	3	29,100.0	2,521.7	TM 11240-ODA		87,300.0	7,565.0	Flatbed
D08607	TRAILER,CARGO	3	2,694.0	778.1	TM 11240-ODA		8,082.0	2,334.3	Flatbed
D08807	TRAILER,TANK	2	2,900.0	705.7	TM 11240-ODA		5,800.0	1,411.4	Flatbed
H00037	TELEPHONE SET	10	5.3	0.2	TM 11379A-OI		52.5	2.1	Dry Van
H00047	INVERTER,POWER,STAT	16	20.0	2.3	TM 12359A-OD/B		320.0	36.8	Dry Van
H20442	ANTENNA	5	14.7	0.8	TM-07508A-14		73.5	3.8	Dry Van
H20472	ANTENNA ELEVATOR GR	36	43.0	3.0	TM 11-5985-357-13		1,548.0	108.0	Dry Van
H20782	CABLE ASSEMBLY,SPEC	30	43.0	2.1	TM 11-5995-208-10	Estimated	1,290.0	64.2	Dry Van
H20792	CABLE ASSEMBLY,SPEC	15	120.0	12.0	TM 11-5995-208-10	Estimated	1,800.0	180.0	Dry Van
H20817	CABLE ASSEMBLY,TELE	2	7.0	0.7	TM 2000-OD/2C and TM 11-5995-208-10	Estimated	14.0	1.3	Dry Van

TAMCN	ITEM NAME	NUMBER TO MOVE	WEIGHT (LBS)	VOLUME (Cubic Feet)	SOURCE	REMARKS	TOTAL WEIGHT (LBS)	TOTAL VOLUME (Cubic Feet)	SHIPPING MODE
H20847	CABLE ASSEMBLY AND	20	90.0	7.0	TM 2000-OD/2C and TM 11-5995-208-11	Estimated	1,800.0	140.0	Dry Van
H20862	CABLE ASSEMBLY AND	8	180.0	7.0	TM 2000-OD/2C and TM 11-5995-208-12	Estimated	1,440.0	56.0	Dry Van
H20872	CABLE ASSEMBLY,TELE	5	50.0	3.2	TM 2000-OD/2C		250.0	16.0	Dry Van
H22072	DISTRIBUTION BOX	16	15.0	0.4	TM 2000-OD/2C		240.0	6.4	Dry Van
H23022	INTERCONNECTING GRO	2	150.0	11.6	ULSS 001991-15		300.0	23.2	Dry Van
H23792	RADIO SET CONTROL G	46	10.3	0.1	TM 2000-OD/2C		471.5	2.5	Dry Van
H23802	REEL EQUIPMENT	8	5.0	1.0	TM 11-3895-203-24P		40.0	8.0	Dry Van
H23852	REELING MACHINE,CAB	6	133.0	7.0	SL-3-00272A		798.0	42.0	Dry Van
H24432	TELEPHONE SET	19	9.8	0.3	TM 2000-OD/2C		185.3	6.5	Dry Van
H34582	CABLE ASSEMBLY,FIBE	19	42.0	2.0	TM 11-6020-200-23&P		798.0	38.0	Dry Van
H34592	CABLE ASSEMBLY,FIBE	15	115.0	6.0	TM 11-6020-200-23&P		1,725.0	90.0	Dry Van
H60022	CHARGER,BATTERY	2	34.0	1.7	TM 12359A-OD/B		68.0	3.4	Dry Van
H69692	ANTENNA	20	14.7	0.6	TM-07508A-14 & TM 2000-OD/2C	Estimated	294.0	11.3	Dry Van
H70152	METER,SPECIAL SCALE	1	12.0	0.4	FP 10704B		12.0	0.4	Dry Van
H70302	MULTIMETER	7	0.7	0.0	ULSS 004693-15		4.6	0.1	Dry Van
H72182	DUMMY LOAD,ELECTRIC	2	10.0	0.3		Estimated	20.0	0.6	Dry Van
H72552	GROUNDING KIT	1	34.6	0.9	ULSS 007693-15		34.6	0.9	Dry Van
H77057	POWER SUPPLY	9	33.0	2.2	TM 12359A-OD/B		297.0	19.4	Dry Van
H79147	TOOL KIT,ELECTRICIA	20	3.5	0.2	SL-3-00380A		70.0	3.0	Dry Van
H81002	LAPTOP	8	9.0	487.0		Estimated	72.0	3,896.0	Dry Van
H84102	PRINTER,LASER JET	10	25.0	2.7		Estimated	250.0	27.2	Dry Van
H84512	POWER SUPPLY	10	60.0	2.8	TM 2000-OD/2C	Used UPS from A05047G	600.0	27.5	Dry Van
KIV052	SNOW BLOWER	2	100.0	5.0		Estimated	200.0	10.0	Dry Van
KL0237	SHELTER,MEDICAL.POR	5	795.0	96.0	ULSS 005099-15	Used C34132F as proxy	3,975.0	480.0	Dry Van
KL0237	TENT	4	455.0	19.0	Tent, General Purpose Medium, SL-3-01362B	Estimated	1,820.0	76.0	Dry Van
KL0307	HEATER,MULTI-FUEL	3	100.0	9.0	TM 11800A-OI	Used V00102E as proxy	300.0	27.0	Dry Van
KL3552	ROUTER	94	10.0	0.2		using CISCO 2500	940.0	17.7	Dry Van
L02112	DUPLICATOR	1	25.0	2.7		using Laser Printer as proxy	25.0	2.7	Dry Van
L02462	FLAG,NATIONAL	1	25.0	3.0		Estimated	25.0	3.0	Dry Van
L02462	FLAG,ORGANIZATIONAL	1	25.0	3.0		Estimated	25.0	3.0	Dry Van

TAMCN	ITEM NAME	NUMBER TO MOVE	WEIGHT (LBS)	VOLUME (Cubic Feet)	SOURCE	REMARKS	TOTAL WEIGHT (LBS)	TOTAL VOLUME (Cubic Feet)	SHIPPING MODE
L02472	FACSMILE MACHINE	1	5.0	0.6		Estimated	5.0	0.6	Dry Van
L05632	SAFE	2	500.0	5.0		Estimated	1,000.0	10.0	Dry Van
L06932	TOOL KIT	1	90.0	3.5		Used A79022E as a proxy	90.0	3.5	Dry Van
L07257	TYPEWRITER,SWINTEC	2	15.0	1.0	SWINTEC Website		30.0	2.1	Dry Van
ML0182	SKID,SPILL	10				No data found	0.0	0.0	Dry Van

Appendix F Cost Excursions

After submission of the initial Draft Final Report, the MAGTFTC G-4 informed MCCES that additional barracks space was going to be made available for MCCES use in April 2011. MCCES requested that the Study Team consider the cost implications of various options for utilizing the space to house Communications School students.

F.1 BCOC STUDENT EXCURSIONS

The cost estimates discussed in section 5.4 assumed that BCOC students would PCS from Quantico to 29 Palms to BCOC and then PCS once more to their initial duty locations. The first excursion considers housing single BCOC students (already in a PCS status) in spaces provided by MCCES and, therefore, eliminate the requirement to incur BAH costs. The second and third excursions consider a single PCS move of BCOC students from Quantico to their initial duty locations and, when a BCOC is about to convene, the students would attend BCOC in a TAD status.

F.1.1 BCOC Student BAH Excursion

The first excursion eliminates the BAH costs for single BCOC students by housing those students in the barracks. 68% (102) of the 150 BCOC students are expected to be single. Including the time spent waiting for a BCOC class to begin, the average BCOC student spends 6.908 months at the Communications School. The BAH rate for those without dependents at 29 Palms is $861 per month. Housing single BCOC students in the barracks can result in an additional reduction of $606,674 (102 * 6.908 * $861) in annual operating costs compared with Quantico, as shown in Table F-1.

Table F-1. Single BCOC Student BAH Cost Excursion

Element	Quantico	29 Palms Base Case	BCOC Single Students Reside in Barracks
Active Duty Permanent Party BAH	$1,333,916	$686,709	$686,709
Civilian Staff Pay and Benefits	$690,849	$440,518	$440,518
TAD	$55,986	$55,137	$55,137
Vehicle	$4,656	$0	$0
Printing and Duplication	$58,520	$18,536	$18,536
Building Maintenance 29 Palms	$0	$107,718	$107,718
BCOC Student PCS	$903,586	$1,862,063	$1,862,063
BCOC Student BAH	$1,486,956	$952,848	$346,174
ACOC and WOCC Travel and Per Diem	$563,322	$836,085	$836,085
Other	$404,821	$404,821	$404,821
O&S Attributable to Communications Training	$5,670,362	$5,364,436	$4,757,761
Increase (Decrease) from Quantico	NA	($305,927)	($912,601)

F.1.2 BCOC Student TAD Excursions

Two cost excursions that consider the scenario in which BCOC students PCS to their initial duty locations upon graduation from TBS and attend BCOC in a TAD status were conducted. The first of these considers the case where the students reside in the barracks and incur only the M&IE portion of Per Diem expenses. For completeness, the Study Team also considered the full Per Diem case. The results are shown in Table F-2.

As only one PCS move is conducted, PCS costs are reduced. Rather than receiving BAH at either Quantico or 29 Palms, BCOC students would receive BAH at their respective permanent duty locations. The figures indicated in the TAD cases are the average BAH for locations with Lieutenant 0602 personnel, weighted by the number of personnel at each location and expected marital status.

Travel costs are estimated to be $172,972. 150 students attend BCOC for 147 days including weekends and the 29 Palms M&IE rate is $56 per day, resulting in a M&IE cost of $1,234,800 (150 * 147 * $56). Four percent of Lieutenant 0602 billets are at 29 Palms and the cost must be adjusted (multiplied by 0.96) to account for that percentage. The M&IE cost is, thus, $1,185,408 and the total TAD cost is $1,358,380. The 29 Palms lodging Per Diem rate is $83 per day, resulting in an additional expense in the full Per Diem case of $1,756,944 (0.96 * 150 * 147 * $83) and a total TAD cost of $3,115,324.

Both TAD cases would result in a net increase in the annual cost of communications training compared with Quantico.

Table F-2. BCOC Student TAD Cost Excursions

Element	Quantico	29 Palms Base Case	BCOC TAD M&IE Only	BCOC TAD Full Per Diem
Active Duty Permanent Party BAH	$1,333,916	$686,709	$686,709	$686,709
Civilian Staff Pay and Benefits	$690,849	$440,518	$440,518	$440,518
TAD	$55,986	$55,137	$55,137	$55,137
Vehicle	$4,656	$0	$0	$0
Printing and Duplication	$58,520	$18,536	$18,536	$18,536
Building Maintenance 29 Palms	$0	$107,718	$107,718	$107,718
BCOC Student PCS	$903,586	$1,862,063	$903,586	$903,586
BCOC Student BAH	$1,486,956	$952,848	$1,195,109	$1,195,109
BCOC TAD	$0	$0	$1,358,380	$3,115,324
ACOC and WOCC Travel and Per Diem	$563,322	$836,085	$836,085	$836,085
Other	$404,821	$404,821	$404,821	$404,821
O&S Attributable to Communications Training	$5,670,362	$5,364,436	$6,006,600	$7,763,544
Increase (Decrease) from Quantico	NA	($305,927)	$336,237	$2,093,181

F.2 ACOC AND WOCC STUDENT EXCURSION

Currently, the cost estimates assume that ACOC and WOCC students will attend their respective courses in a TAD status, incurring both lodging and M&IE Per Diem Costs. This excursion considers housing all ACOC and WOCC students in the newly available barracks spaces and incurring only the M&IE Per Diem costs. The results are shown in Table F-3. By housing the ACOC and WOCC students in the barracks, an additional savings of $450,838 in annual operating costs can be realized.

Table F-3. ACOC and WOCC TAD Cost Excursion

Element	Quantico	29 Palms Base Case	ACOC and WOCC M&IE Only
Active Duty Permanent Party BAH	$1,333,916	$686,709	$686,709
Civilian Staff Pay and Benefits	$690,849	$440,518	$440,518
TAD	$55,986	$55,137	$55,137
Vehicle	$4,656	$0	$0
Printing and Duplication	$58,520	$18,536	$18,536
Building Maintenance 29 Palms	$0	$107,718	$107,718
BCOC Student PCS	$903,586	$1,862,063	$1,862,063
BCOC Student BAH	$1,486,956	$952,848	$952,848
ACOC and WOCC Travel and Per Diem	$563,322	$836,085	$385,247
Other	$404,821	$404,821	$404,821
O&S Attributable to Communications Training	$5,670,362	$5,364,436	$4,913,597
Increase (Decrease) from Quantico	NA	($305,927)	($756,765)

F.3 COST EXCURSION SUMMARY

The cost excursions considered changes in BCOC student PCS and housing assumptions as well as a change in the ACOC and WOCC student housing assumption. As the BCOC assumptions can be treated independently of the ACOC and WOCC assumption, combinations of the assumptions can be considered, as shown in Table F-4.

The upper left-most figure represents the base case difference between the annual operating costs at 29 Palms vice the costs at Quantico, i.e. the case in which all BCOC students receive BAH and all ACOC and WOCC students receive full Per Diem. Selecting the row containing the desired BCOC student assumption and the column containing the desired ACOC and WOCC assumption yields the cell containing the difference between operating costs at Quantico and the operating costs at 29 Palms under the desired assumptions.

The figures show that the only case in which it is beneficial to PCS BCOC students to their initial duty locations and have them attend BCOC on a TAD status is to house them and all of the ACOC and WOCC students in the barracks. If the BCOC students

execute two PCS moves, one from Quantico to 29 Palms and another from 29 Palms to their initial duty locations, the reduction in operating cost ranges from the base case $305,927 to as much as $1,363,440 if all students reside in the barracks.

Table F-4. Cost Excursion Summary

Increase (Decrease) in Costs Attributable to Communications Training	ACOC and WOCC Students Receive Full Per Diem	ACOC and WOCC Students Reside in Barracks (M&IE Only)
BCOC PCS to 29 Palms - All Students Receive BAH	($305,927)	($756,765)
BCOC PCS to 29 Palms - Single Students Reside in Barracks and do not Receive BAH	($912,601)	($1,363,440)
BCOC TAD to 29 Palms - All Reside in Barracks and Receive M&IE Only	$336,237	($114,601)
BCOC TAD to 29 Palms – Receive Full Per Diem	$2,093,181	$1,642,343